

**GW - 33**

**PERMITS,  
RENEWALS,  
& MODS**

State of New Mexico  
Energy, Minerals and Natural Resources Department

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**Susana Martinez**  
Governor

**John Bemis**  
Cabinet Secretary

**Brett F. Woods, Ph.D.**  
Deputy Cabinet Secretary

**Jami Bailey**  
Division Director  
Oil Conservation Division



**MAY 14, 2013**

**CERTIFIED MAIL**  
**RETURN RECEIPT NO: 3341 0383**

Mr. Eric Weaver  
Western Gas Resources, Inc.  
1201 Lake Robbins Drive  
The Woodlands, TX 77380

Dear Mr. Weaver:

Based on your response given in the "Oil & Gas Facilities Questionnaire for Determination of a WQCC Discharge Permit" and a file review, the Oil Conservation Division (OCD) has determined that Western Gas Resources must renew its WQCC Discharge Permit for the San Juan River Gas Plant (GW-033) because of the discharge of reverse osmosis reject water directly to the ground. Please submit a complete permit renewal application pursuant to 20.6.2.3106 NMAC within 120 days of your receipt of this letter. Please include the \$100.00 filing fee specified in 20.6.2.3114 NMAC. Please note the renewal application informational requirements specified in 20.6.2.3106 - .3108 NMAC.

If you have any questions regarding this matter, please contact Glenn von Gonten at 505-476-3488.

Thank you for your cooperation.

A handwritten signature in blue ink that reads "Glenn von Gonten".

**Glenn von Gonten**  
Senior Hydrologist

GvG/gvg



GW-33

***DISCHARGE PLAN RENEWAL APPLICATION***

***WESTERN GAS RESOURCES, INC.***

***SAN JUAN RIVER GAS PLANT***

***SAN JUAN COUNTY, NEW MEXICO***

***Submitted for:***

***Western Gas Resources, Inc.  
1201 Lake Robbins Drive  
The Woodlands, Texas 77380***

***June 2011***



***DISCHARGE PLAN RENEWAL APPLICATION***

***WESTERN GAS RESOURCES, INC.  
SAN JUAN RIVER GAS PLANT  
SAN JUAN COUNTY, NEW MEXICO***

***Date Prepared:***  
June 28, 2011

***Prepared For:***  
State of New Mexico  
Oil Conservation Division

***Prepared on Behalf of:***  
Western Gas Resources, Inc.

A handwritten signature in black ink, appearing to read "Eric Weaver", written over a horizontal line.

Eric Weaver  
Sr. Environmental Analyst

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Revised June 10, 2003

Submit Original  
Plus 1 Copy  
to Santa Fe  
1 Copy to Appropriate  
District Office

**DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS,  
REFINERIES, COMPRESSOR, GEOTHERMAL FACILITIES  
AND CRUDE OIL PUMP STATIONS**

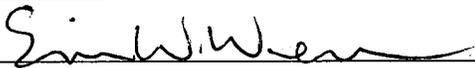
(Refer to the OCD Guidelines for assistance in completing the application)

New  Renewal  Modification

1. Type: Natural Gas Processing Plant
2. Operator: Western Gas Resources, Inc.  
Address: 1201 Lake Robbins Drive, The Woodlands, Texas, 77380  
Contact Person: Eric Weaver Phone: (432) 684-2808
3. Location: \_\_\_\_\_/4 NW /4 Section 1 Township 29N Range 15W  
Submit large scale topographic map showing exact location.
4. Attach the name, telephone number and address of the landowner of the facility site.
5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.
6. Attach a description of all materials stored or used at the facility.
7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.
8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.
9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.
10. Attach a routine inspection and maintenance plan to ensure permit compliance.
11. Attach a contingency plan for reporting and clean-up of spills or releases.
12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
14. CERTIFICATION I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Eric Weaver

Title: Senior Environmental Analyst

Signature: 

Date: 6/30/2011

E-mail Address: eric.weaver@anadarko.com

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## EXECUTIVE SUMMARY

Western Gas Resources Inc. (WGR), 1201 Lake Robbins Drive, The Woodlands, TX 77380, submits this Discharge Plan renewal application, dated August, 2010, for the San Juan River Gas Plant located in Kirtland, San Juan County, New Mexico. The current discharge plan, GW-033, expires on December 29, 2011. The only significant changes to the plant since the permit renewal in 2006 is the addition of the Acid Gas Injection (AGI) well and supporting equipment, along with the closure of the evaporation pond.

As part of the new AGI system the acid gas from the amine treater will be routed to compression for down-hole injection and sequestration rather than going to the sulfur recovery unit. An approved C-108 allows acid gas injection into the Entrada formation.

Total production of wastewater, both contact and non-contact, is expected to be approximately 655,000 gallons per year. The non-contact wastewater consists of hydrostatic test water, cooling tower blow-down, and boiler blow-down. The condensed steam from the sulfur recovery unit and the hydrostatic test water are exempt from RCRA Subtitle C regulations. The boiler blow-down is considered non-hazardous due to the non-hazardous nature of the process that produces the wastewater. With the start up of the AGI system the condensed steam from the sulfur recovery unit will no longer be a factor in daily non-contact water blow-down as the plant will be purged and retired in place.

Except for a low volume of laboratory wastewater, the contact wastewater stream is exempt from RCRA Subtitle C regulations. The laboratory wastewater is not a hazardous waste, based on its characteristics and laboratory analytical data.

There are no RO effluent discharges direct to ground, surface waters, or to unlined ponds. All contact and non-contact with the exception of RO effluent is being hauled off-site disposal in a deep well injection facility. This wastewater is stored in a tank battery at the inlet area.

## PUBLIC NOTICE

Western Gas Resources Inc., 1201 Lake Robbins Drive, The Woodlands, TX 77380 has submitted a renewal application to the New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division for the previously approved discharge plan (GW-033) for their San Juan River Gas Plant, located in Section 1, Township 29 North, Range 15 West, NMPM, San Juan County, New Mexico, approximately eight miles west of Farmington, New Mexico and 1.7 miles north of Kirtland, New Mexico.

Plant process wastewater is stored in a tank battery within a lined impoundment until such time it can be hauled to off-site disposal by transport trucks. Groundwater most likely to be affected by a spill, leak or accidental discharge varies in depth from 10-50 feet, with a total dissolved solids concentration of approximately 4,500 mg/l. The discharge plan addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

Any interested person or persons may obtain information; submit comments or request to be placed on a facility-specific mailing list for future notices by contacting Leonard Lowe at the New Mexico OCD at 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3492. The OCD will accept comments and statements of interest regarding the renewal and will create a facility-specific mailing list for persons who wish to receive future notices.

NOTA PUBLICA

(Western Gas Resources Inc.) Los Recursos occidentales del Gas S.a., 1201 Lake Robbins Drive, The Woodlands, TX 77380 se han sometido una aplicación de renovación a (New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division) la Energía de Nuevo México, los Minerales y el Departamento Natural de Recursos, División de Conservación de Petróleo para el plan anteriormente aprobado de descarga (GW-033) para su San Planta de gas del Río de Juan, situado en la Sección 1, el Municipio 29 del norte, la Gama 15 Occidental, NMPM, San Condado de Juan, Nuevo México, aproximadamente ocho millas al oeste de Farmington, Nuevo México y 1,7 millas al norte De Kirtland, Nuevo México.

Plante wastewater de proceso es almacenado en una batería del tanque dentro de una confiscación forrada hasta que tal tiempo que pueda ser acarreado a la disposición fuera de obra por camiones de transporte. La agua subterránea más probable de ser afectada por un derrame, la filtración o descarga accidental varían a fondo de 10-50 pies, con un suma se disolvieron concentración de sólidos de aproximadamente 4.500 mg/L. El plan de la descarga dirige cómo productos de yacimiento petrolífero y malgasta será manejado apropiadamente, será almacenado, y será deshecho de, inclusive cómo derrames, las filtraciones, y otras descargas accidentales a la superficie serán logradas proteger agua dulce.

Alguna persona o las personas interesadas pueden obtener información; sométase comentarios o la petición para ser colocada en una lista de envío facilidad-específico para futuras notas contactando Leonard Lowe en el Nuevo México OCD en 1220 S. del sur. Francis Maneja, Santa Fe, Nuevo México 87505, (New Mexico OCD at 1220 South St. Francis Drive, Santa Fe, New Mexico 87505) el Teléfono (505) 476-3492. El OCD aceptará que comentarios y declaraciones de interés con respecto a la renovación y creará una lista de envío facilidad-específico para personas que desean recibir futuras notas.

## **1.0 GENERAL INFORMATION**

### **1.1 *Western Gas Resources Representatives***

Local Representative:

Arlan Thorson  
Operations Superintendent  
P.O. Box 70  
Kirtland, New Mexico 87417  
(505) 598-5601

Technical Representative:

Eric Weaver  
Anadarko Petroleum Corporation  
#10 Desta Drive Suite 650 E  
Midland, Texas 79705  
(432)684-2808

### **1.2 *Location of Discharges***

The San Juan River Plant is located in Section 1, Township 29 North, Range 15 West, San Juan County, New Mexico, approximately eight miles west of Farmington and 1.7 miles north of Kirtland, New Mexico. Highway 550 and County Road 61 provide access to the plant.

The land to the north and west of the plant site is publicly owned. Approximately thirty private parties own tracts located south and east of the plant.

### **1.3 *San Juan River Plant Operations***

Current activities at the San Juan River Plant include natural gas sweetening, gas compression, gas dehydration, sulfur recovery, liquid storage, and operation of plant utilities. These utilities include steam producing boilers and a cooling water system. The cooling water system is only operated during the warm weather months as a trim cooler; therefore, the wastewater generated by the cooling system blow-down is produced only during those months of warm weather operation.

### **1.4 *Proposed changes to system with the introduction of Acid Gas Injection (AGI)***

The acid gas from the amine treater will be routed to compression for down-hole injection and sequestration rather than going to the sulfur recovery unit. An approved C-108 allows acid gas injection into the Entrada formation. The details of this program are available online on the OCD website included with the issued C-108. (See attached diagrams for facility layout)

#### **1.4.1 Modification Benefits to the discharge plan by implementing AGI**

- Shutting down and retiring of the sulfur recovery unit. This will eliminate the potential discharge of sulfur and sulfur byproducts.
- There will be no more steam, steam condensers and blow-down from the many heat exchangers that are associated with an SRU.
- There will be no SO<sub>2</sub> emissions from the incinerator unless the plant is in a scheduled, routine or emergency maintenance of the acid gas injection equipment.
- Transportation of molten sulfur to the rail-site in Gallup New Mexico over some of the busiest roads in the state will cease.
- We will be able to close down our rail-site and car/sulfur storage along one of the busiest railroads in the country. This will also enable us to stop rail car loading and moving onto the main rail system.
- This project will also reduce air quality emissions of CO<sub>2</sub> and SO<sub>2</sub> by sequestering the CO<sub>2</sub> and H<sub>2</sub>S into a trapped zone (see C-108 application).

#### **1.4.2 Project Impacts**

- A new cooling tower with a 960 gallon water capacity will be installed to control the inlet and inter-stage temperatures of the AGI compression. This will require periodic blow-downs to the wastewater tank battery. Estimated volumes are 10 bbls per event.
- Three (3) 450 hp Caterpillar acid gas injection compressors will be installed. Skid drainage will be to OCD specifications.
- For scheduled maintenance and emergency events, acid gas will be routed to the flare or incinerator for destruction/combustion.
- The only new underground lines added will be the injection and return line to the AGI well.
- (See attached diagrams)

#### **1.4.3 Added Equipment**

- Cooling tower skid with associated pumps.
- Three (3) 450 hp compressor units with 30 gallon slop oil blow pots.
- One (1) 500 gallon antifreeze tank.
- One (1) 500 gallon motor oil tank.
- One (1) 1,000 gallon lube oil tank.
- One (1) 500 gallon nitrogen / compressor air tank.

## 2.0 PLANT PROCESSES

### 2.1 Sources and Quantities of Effluent and Process Fluids

The source of the San Juan River Plant's water is the Lower Valley Water Users Association. Approximately 15,000 gallons of high-quality water are purchased daily from the association.

Contact water (process water that has contacted hydrocarbon streams) is generated at a rate of approximately 150 gallons per day by the following sources:

- Dehydration unit and triethylene glycol (TEG) regeneration – Regeneration of TEG by natural gas dehydration units creates a wastewater stream. This stream is considered to be an exempt waste in accordance with RCRA Subtitle C regulations listed in 40 CFR 261.4(b)(5). The various exempt waste streams are listed in the May 1995 EPA document number EPA530-K-95-V003.
- Amine reflux and gas inlet – Contact wastewater is produced at the amine reflux and gas inlet vessels. These streams are also considered to be exempt wastes in accordance with RCRA Subtitle C regulations listed in 40 CFR 261.4(b)(5). The various exempt waste streams are listed in the May 1995 EPA document number EPA530-K-95-V003.

Wastewater is produced by laboratory tests performed at the plant. The tests are performed to determine the content of H<sub>2</sub>S extracted from the gas sample. The waste consists of small amounts of water, ¼% iodine, H<sub>2</sub>S extracted from the gas sample, sulfuric acid, and/or hydrochloric acid. No more than one quart per month of the iodine or acids each are used. The laboratory wastewater stream volume is low and the stream is considered to be a non-exempt waste in accordance with 40 CFR 261.4(b) (5).

In 1996, the typical laboratory wastewater stream was collected in a clean 5-gallon pail and a grab sample was retrieved for analyses of hazardous waste characteristics (ignitability, corrosivity, reactivity, and toxicity). The sample results indicated that this waste is not characteristically hazardous. A copy of the 1996 Laboratory analytical results is included in Appendix A. This waste is also not a listed hazardous waste in the RCRA regulations.

The laboratory wastewater stream is commingled with the contact wastewater streams. The commingled wastewater stream is considered to be an exempt waste according to RCRA Subtitle C, since the non-exempt waste does not indicate hazardous characteristics prior to commingling and since the contact wastewater streams are considered to be exempt. The mixture rule is also discussed in the EPA document number EPA530-K-95-V003.

Non-contact wastewater is currently produced at an average rate of 1,440 gallons per day. The non-contact water streams consist of the following:

- Boiler blow-down – Two boilers produce steam for the amine unit and other process requirements. Periodic blow-down is required to reduce total dissolved solids (TDC). This stream is routed through a sump and subsequently to the cooling tower. This stream is not a

RCRA listed hazardous waste and is considered non-hazardous based on process knowledge. Periodic in-plant tests performed for pH and conductivity also demonstrate that this waste stream does not exhibit characteristics for corrosivity.

- Cooling tower blow-down – An evaporative cooling tower is used to cool water for gas plant processes. Much of the water is recycled, but some periodic blow-down is required to avoid exceeding operating limits for TDS, phosphates, and hardness. Variation in the blow-down rate will occur during the year due to the seasonal operation of the cooling tower system. Cooling tower blow-down in gas production is considered as an exempt waste in accordance with 40 CFR 261.4(b) (5) and is listed in the EPA document number EPA530-K-95-V003.
- Due to the addition of the AGI compressors an additional cooling tower will be added, increasing the amount of daily non-contact blow-down water. An evaporative cooling tower is used to cool water for acid gas leaving the compressor. Much of the water is recycled, but some periodic blow-down is required to avoid exceeding operating limits for TDS, phosphates, and hardness. Variation in the blow-down rate will occur during the year due to the seasonal operation of the cooling tower system. Cooling tower blow-down in gas production is considered as an exempt waste in accordance with 40 CFR 261.4(b) (5) and is listed in the EPA document number EPA530-K-95-V003.
- Sulfur recovery plant – Wastewater condensed from the sulfur recovery treatment plant is periodically generated in low volumes. This stream is considered to be an exempt waste in accordance with 40 CFR 261.4(b) (5). This is referenced specifically as gas plant sweetening wastes for sulfur removal. **This waste stream will no longer be a factor in daily non-contact water blow-down as the plant will be purged and retired in place.**
- Hydrostatic test wastewater is periodically generated during plant maintenance and construction operations. Hydrostatic test wastewater is considered to be exempt waste in accordance with 40 CFR 261.4(b) (5). Disposal of this water is made directly to the wastewater tank battery.

A summary of the expected annual wastewater discharge volumes is presented below:

Annual Wastewater Discharge Estimation	
Contact water to lined impoundment	55,000 gallons
Non-contact water to lined impoundment	600,000 gallons
Total expected wastewater discharge	655,000 gallons

A site plot plan and a process flow sheet are included in Appendix B.

## 2.2 Wastewater Characteristics

The non-contact wastewater stream is commingled with the contact wastewater stream in a large sump and then routed to the double lined impoundment. Wastewater characteristics will vary depending upon the ratio of contact to non-contact water being discharged to the impoundment at any given time. More non-contact wastewater is produced during the warm weather months than during cooler months, due to the operation of the cooling tower system.

The following analytical results were obtained from grab samples taken at the lined pond on April 16, 1991, November 6, 1996 and September 2010. WGR also obtained grab samples of the lab waste, contact, and non-contact wastewaters during November, 1996. Results of the sample analytical data are presented in the following summary tables:

<b>BTEX ANALYTICAL RESULTS (mg/L)</b>				
<b>CONSTITUENT</b>	<b>April 16, 1991</b>	<b>November 1996</b>	<b>September 2010</b>	<b>WQ STDS</b>
Benzene	0.056	0.254	0.144	0.01
Toluene	0.013	0.866	0.538	0.75
Ethylbenzene	0.0055	0.031	0.0664	0.75
Total Xylenes	0.0082	0.338	0.856	0.62

<b>CATION/ANION ANALYTICAL RESULTS (mg/L)</b>			
<b>CONSTITUENT</b>	<b>April 16, 1991</b>	<b>November 1996</b>	<b>September 2010</b>
Calcium	840	182	27
Magnesium	780	553	4.88
Potassium	99	1182	0.950
Sodium	16,500	16,928	852
Chloride	28,600	10,450	270
Sulfate	619	2189	<0.01

## 2.3 Wastewater Management

All wastewater streams are collected in the contact wastewater sump located on the north side of the gas plant. The sump is constructed of steel and is approximately 10 feet deep. The sump is equipped with a plastic liner to prevent corrosion. Wastewater is pumped from the sump to the evaporation impoundment located on the south side of the gas plant.

The boiler blow-down stream is collected in a concrete sump that is located in the boiler house. From there, it is transferred to the cooling tower. The commingled cooling tower blow-down and boiler blow-down streams are transferred to the contact wastewater sump.

The storm drain sump is located east of the amine treating unit and west of the control room. In addition to collecting storm water runoff, the sump is used to drain process filters prior to disposal. The sump is constructed of concrete. Liquids collected in the sump are pumped to the contact wastewater sump.

Wastewater is transferred from the contact wastewater sump to the wastewater tank battery. There is no discharge of wastewater to ground, surface water, or to unlined impoundments.

Used compressor engine oil, antifreeze, produced water, and other fluid wastes associated with plant operations are not combined with the wastewater streams. These fluids are collected in drums or atmospheric storage tanks to prevent their migration into the environment.

## **2.4 Spill/Leak Prevention and Housekeeping Procedures**

A copy of the Spill Prevention Control and Countermeasure Plan (SPCC) is included in Appendix C. The spill/leak prevention and housekeeping procedures are discussed in the following sections.

### **2.4.1 Monitoring of Wastewater Disposal Systems**

In accordance with the current Discharge Plan approval, all sumps at the plant are inspected annually. Inspection reports are maintained at the plant office and are submitted to the Oil Conservation Division. The current Discharge Plan approval also requires that all below ground process and wastewater lines be tested to demonstrate mechanical integrity at least every five years. The below ground lines at plant were subjected to pressure tests during the period of August 22 to November 21, 2008.

### **2.4.2 Protection from Spills and Leaks**

WGR acts responsibly to avoid spills and leaks that might harm the environment. Plant personnel are aware of the imperative nature of spill prevention. Housekeeping measures require prompt identification of leaks, drips and spills.

The San Juan River Gas Plant property is enclosed by a fence to minimize trespassing. With the exception of limited Y-grade natural gas liquid storage east of the plant yard, there is no large scale processing or storage of hydrocarbons at the plant. Therefore, large spills of hydrocarbons are unlikely.

WGR utilizes two concrete storage basins (basin "A" and "B") for the storage of hazardous materials. The basins were previously used as containment for cooling towers that have been dismantled and removed.

The following substances are stored in basin "A" in quantities of 500 gallons or less: solvent, gasoline, and diesel fuel. Methanol is also stored in basin "A" at a quantity of 1000 gallons or less. The basin walls are high enough to adequately contain the contents of a ruptured tank.

WGR uses the concrete basin "B" beneath the tower as a drum storage area. Empty drums are also stored in this area. Drums are not likely to be disturbed since they are located away from normal work areas.

WGR stores cooling tower and boiler chemicals inside plant buildings on concrete floors. Accidental spills of these chemicals onto the building floors are promptly cleaned up.

In April, 1999 WGR implemented the use of four aboveground pressurized storage tanks. Three 40,000-gallon "bullet" type tanks are located east of the plant yard and are used for the storage of Y-grade natural gas liquids. Storage of the Y-grade NGL is intermittent, since the material is usually pumped directly to a liquids pipeline. Y-grade liquid product is considered to be a gas at ambient conditions. Therefore, the tanks are not equipped with secondary containment.

The fourth tank is a 17,000-gallon pressurized tank that is used to receive pipeline pigging liquids. The tank is equipped with a berm and a 30-mil liner for containment of spills.

Additional storage tanks at the facility include those used for the storage of produced water, amine, triethylene glycol, and used and new refined oils. As required by SPCC regulations, tanks are provided with secondary containment and are designed to prevent leaks and spills. Additional details are provided in the SPCC plan that is attached at Appendix C.

### **2.4.3 Spill Response Measures**

WGR procedures require prompt attention to releases of hydrocarbons and hazardous materials. The following substances are present at the plant site and could potentially be released to the environment:

- Refined hydrocarbons such as engine oil, diesel fuel, and gasoline
- Chemicals such as sulfuric acid, boiler and cooling tower chemicals, amine, and triethylene glycol
- Plant products and by-products, including natural gas liquids, produced water, pigging sludge, sulfur, contact wastewater, and non-contact wastewater

WGR will respond to a spill in accordance with the facility SPCC plan, which is included as Appendix C. Generally, the following procedures will be followed:

- 1) Plant employees will implement appropriate response measures and will report the spill to the Operations Superintendent.
- 2) The Operations Superintendent will notify WGR Environment Engineering staff in Midland, Texas. The Environmental Engineering staff will determine whether the spill is reportable to any regulatory agencies and, if so, submit the required reports.
- 3) Under the direction of the Operations Superintendent, plant personnel will implement appropriate cleanup measures. If requested, Environmental Engineering will provide guidance and oversight.

Absorbent pads and booms are available at the plant site, although the site location makes a discharge to surface water highly unlikely. In the event of a discharge to land, shovels and sand are available for cleanup. Contaminated materials will be handled according to applicable environmental regulations. See Section 3.3 for discussion of solid waste disposal.

## **3.0 WASTEWATER AND SOLD WASTE DISPOSAL**

There is no discharge of wastewater to surface or ground water at the San Juan River Gas Plant. Plant practices are not expected to threaten surface or ground water quality.

### **3.1 On-site Facilities**

As discussed in Section 2.3, the commingled wastewater stream is routed through an oil/water separator. Oil recovery in small quantities is expected. Use of the separator enhances oil recovery.

### **3.2 Off-site Disposal – Wastewater**

Wastewater produced at the San Juan Plant is routinely disposed of off-site. The wastewater is transported to a permitted Class II disposal well, since the wastewaters have been deemed exempt from RCRA Subtitle C. Approval of the well operator and the NMOCD would be obtained prior to disposal of wastewater at an off-site disposal well. This disposal amounts to approximately 400 barrels per week.

On occasion, disposal of pipeline hydrostatic test water is necessary. Disposal of hydrostatic test water is expected to occur no more than twice annually. The water will be transported for off-site disposal.

### **3.3 Solid Wastes**

Solid wastes generated at the San Juan River Gas Plant are generally exempt from RCRA hazardous waste regulations. They are managed in accordance with 19.15.9.712 NMAC. WGR uses Waste Management's landfill facility located in Cortez, Colorado for disposal of most gas plant waste materials. Pipeline pigging sludge is shipped to Envirotech Inc. facilities for landfarming. Other plant wastes such as office trash are shipped to the San Juan County Regional Landfill. Listed below are NMOCD Rule 712 wastes that are shipped off-site disposal:

#### 712 D. (1) Wastes:

- Empty and RCRA-clean barrels, 5-gallon buckets, and 1-gallon containers
- Uncontaminated construction debris
- Uncontaminated concrete
- Non-friable asbestos and asbestos-containing materials
- Office trash
- Paper and empty paper bags
- Soiled rags or gloves that pass Paint Filter Test
- Uncontaminated wood pallets

712 D. (2) Wastes:

- Activated alumina
- Activated carbon
- Amine filters
- Gas condensate filters
- Glycol filters
- Junked pipes, valves, and metal pipe
- Molecular sieve
- Pipe scale and other deposits removed from pipeline and equipment
- Oil filters

712 D. (3) Wastes:

- Contaminated soil other than petroleum contaminated soil
- Petroleum contaminated soil
- Demolition debris not otherwise specified
- Other wastes as applicable, including mole sieve dust filters and cryogenic skid inlet gas filters

### **3.4 Recycled Materials**

Approximately 10,500 gallons of used lubricating oil are produced at the plant per year. The used oil is stored in Tank TK-8901, which is located east of the Compressor Building. The used oil is transported to an off-site recycling facility.

## **4.0 SITE**

The physical characteristics of the plant site have been studied in detail as part of a previously completed land application feasibility study completed in 1986 and 1987. Detailed information concerning site soil and ground water characteristics are presented in the Phase I and II feasibility study reports, and should be consulted if more specific information is required than provided in the following summary.

### **4.1 Hydrologic Features**

Surface water run-off from the plant site is expected to follow the local topographic contours. The topography slopes to the northwest across the majority of the site, although a south-southeasterly slope is apparent in the southeastern portion of the site. The topographic gradient across most the site is relatively flat (on the order of 0.0 1 feet/foot), with the exception of moderate to steep topographic gradients encountered on the flanks of Flare Hill. The infiltration rate of the majority of the surficial deposits is high (Sheppard soil = 8.9 in/hr). Therefore, large-scale overland flow of surface runoff is not anticipated to occur under all but the most extreme storm or flood events.

Surface water bodies within a one-mile radius of the site include 1) the Stevens Arroyo (0.2 miles west), 2) the Farmers Mutual Ditch (0.5 miles south), and 3) small fresh water ponds located on the golf course south of the site. The Stevens Arroyo is an intermittent watercourse. The San Juan River is located greater than one mile south of the plant site.

Based on New Mexico State Engineer well records, ground water wells in the areas are generally completed within the shallow alluvial aquifer at approximately 75 feet below ground surface and are permitted for "domestic" water usage. Ground water is anticipated to discharge as a seep approximately 0.75 miles south of the site where the base of the alluvial aquifer is exposed.

Shallow ground water is contained within alluvial terrace gravel deposits beneath the site. The alluvial sediments are underlain by greenish grey sediments of the Lower Shale Member of the Kirtland Shale. The Kirtland Shale is exposed in the extreme northern and western portions of the site, and approximately 0.5 miles south of the site. The thickness of the alluvial sediments varies from zero feet in the extreme northern and western portions of the site, to greater than 70 feet in the southern and eastern portions of the site. Depth to ground water varies across the site. It is estimated to be less than 10 feet below the surface in the extreme northern and western portions of the site where the alluvial sediments are thin to nonexistent and greater than 50 feet in the extreme southern and eastern portions of the site. Regional ground water flow is to the southwest beneath the majority of the site, with local south to southeasterly flow in the southeast portion of the site.

### **4.2 Surface and Groundwater Quality**

Groundwater samples from on-site monitoring wells and off-site local wells were analyzed for various water quality parameters as part of the Phase I and II feasibility study in 1987. Results of these analyses indicate that WQCC standards for TDS, sulfate, and manganese are exceeded in on-site wells. TDS,

sulfate, and chloride content exceed WQCC standards in all off-site wells. The average TDS for on-site wells is 4,500 mg/L and is 2,775 mg/L for local wells.

Background ground water quality can be assessed from water quality data obtained from the Daley well (the only local well not located down gradient from the plant site). It is interesting to note that the TDS concentration in the Daley well (4,300 mg/L) is higher than that of the local wells located down gradient of the plant site and is near the average TDS concentration for on-site wells (4,500 mg/L). This fact, in conjunction with the high chloride concentrations in the Daley well, suggests that background water quality is comparable to that beneath the plant site.

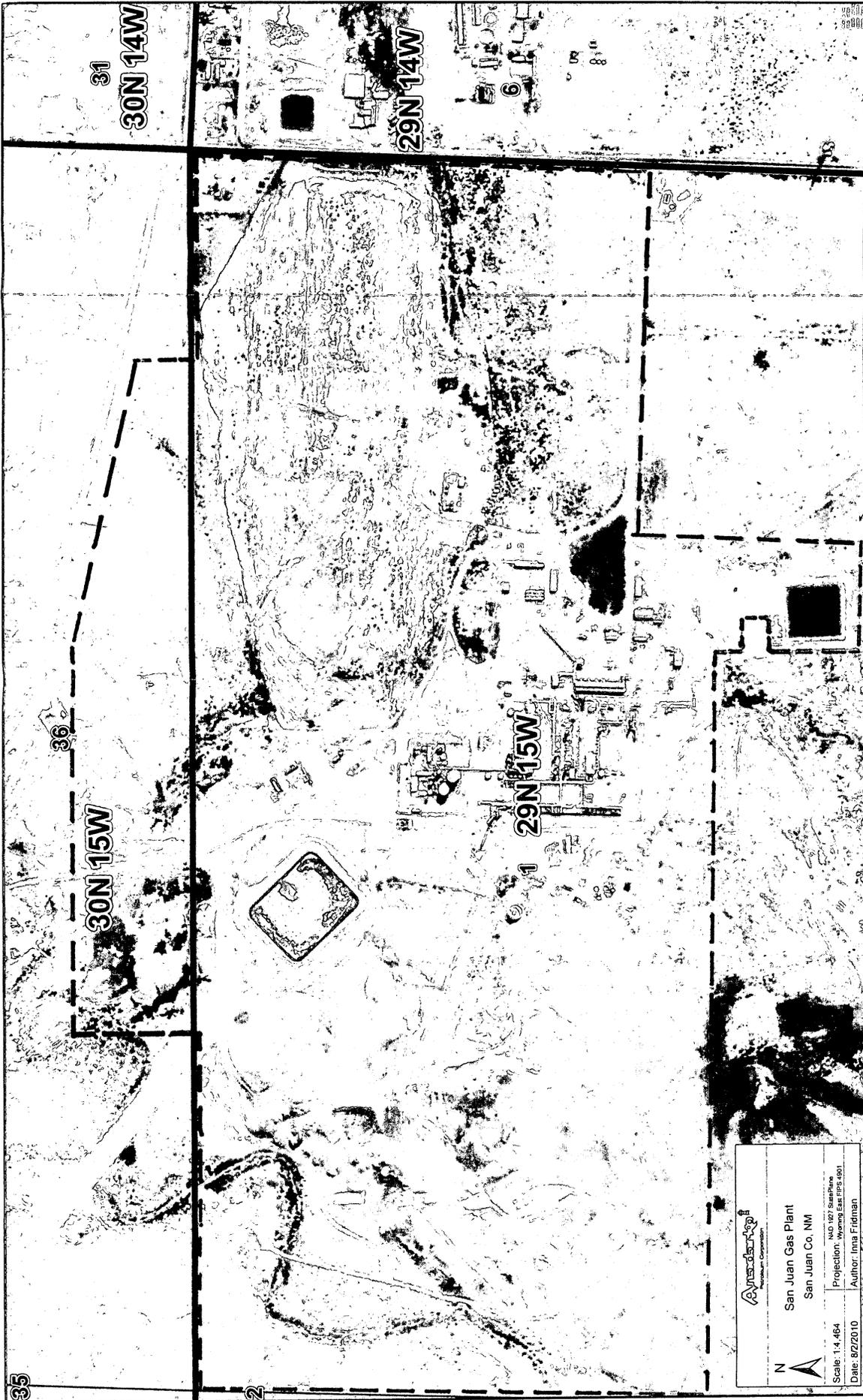
Surface water quality samples have been obtained from the Stevens Arroyo located west of the plant site. Background water quality from Stevens Arroyo reportedly exceeds 10,000 mg/L for TDS and, therefore, exceeds the WQCC limit for surface water.

**FIGURE 1 - SITE PLAN**





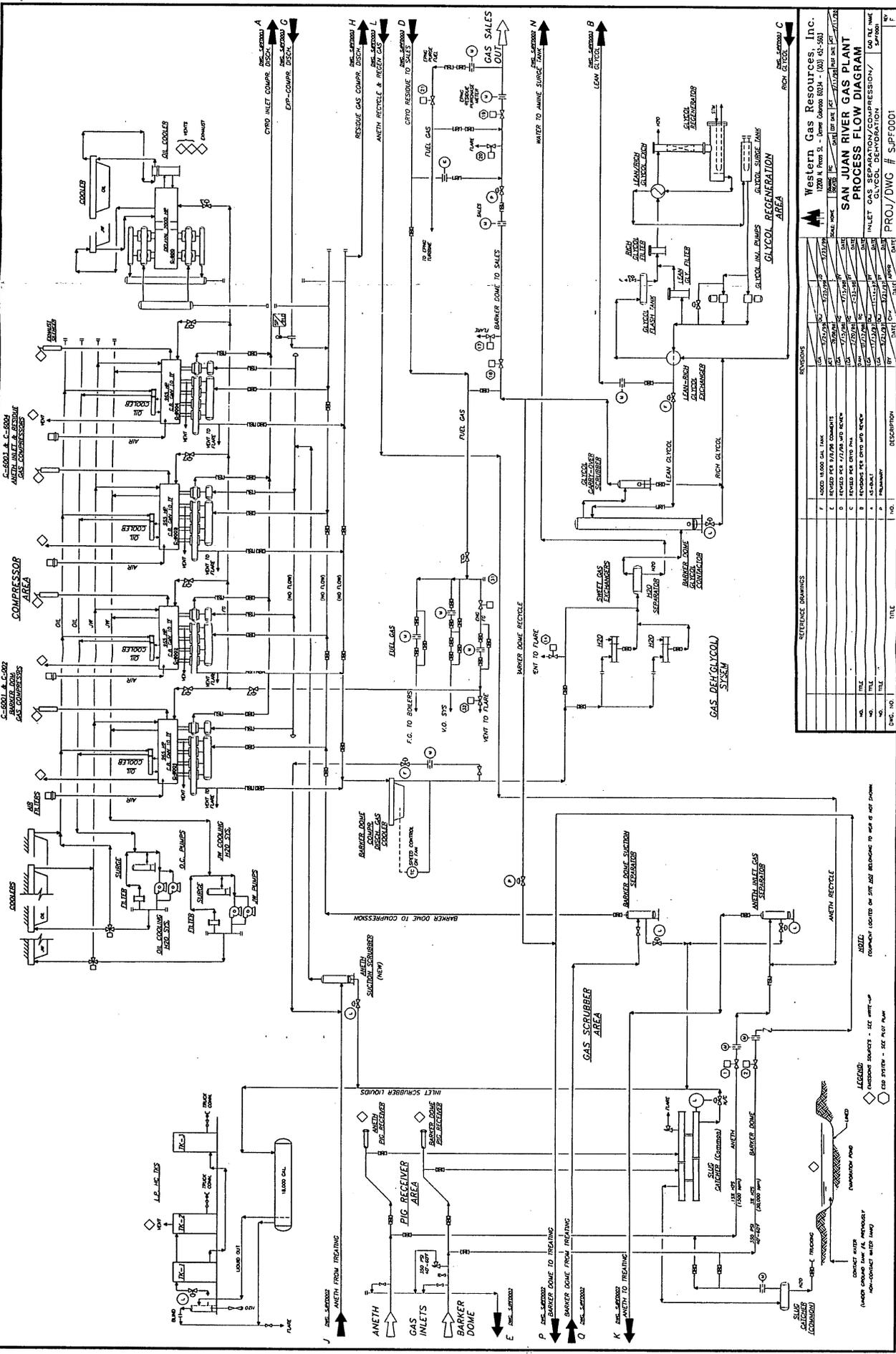
**FIGURE 2 - AERIAL BOUNDARY MAP**



--- = SAN JUAN GAS PLANT PROPERTY BOUNDARY

	
San Juan Gas Plant San Juan Co, NM	
Scale: 1:4,464	Projection: Wyoming East FIPS 501
Date: 9/2/2010	Author: Ima Fridman

**FIGURE 3 – PROCESS FLOWSHEET**



Western Gas Resources, Inc.  
 1200 N. First St. - Denver, Colorado 80204 - (303) 451-5501  
**SAN JUAN RIVER GAS PLANT**  
 PROCESS FLOW DIAGRAM  
 INLET GAS SEPARATION/COMPRESSION / GLYCOL DEHYDRATION  
 PROJ/DWG # SUPF0001

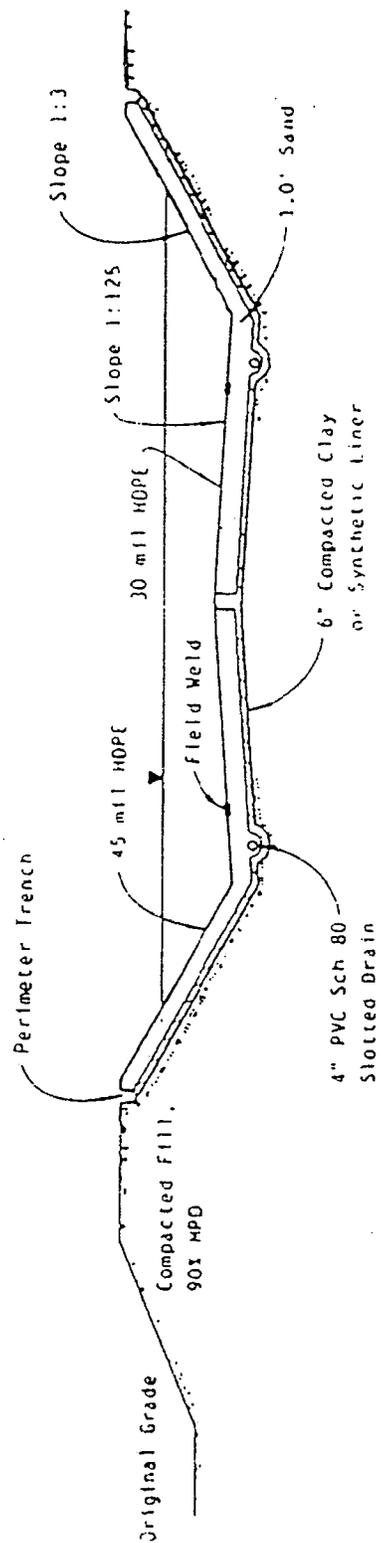
NO.	TITLE	NO.	DESCRIPTION
F	12000 GAL. TANK	1	12000 GAL. TANK
E	RECYCLED GAS	1	RECYCLED GAS
D	RECYCLED GAS	1	RECYCLED GAS
C	RECYCLED GAS	1	RECYCLED GAS
B	RECYCLED GAS	1	RECYCLED GAS
A	RECYCLED GAS	1	RECYCLED GAS
...	...	...	...

**LEGEND:**  
 (M) GAS FLOWING IN THE DIRECTION OF THE ARROW  
 (S) GAS FLOWING IN THE OPPOSITE DIRECTION OF THE ARROW  
 (C) GAS SYSTEM - SEE P&ID PLAN  
 (D) GAS SYSTEM - SEE P&ID PLAN  
 (E) GAS SYSTEM - SEE P&ID PLAN  
 (F) GAS SYSTEM - SEE P&ID PLAN  
 (G) GAS SYSTEM - SEE P&ID PLAN  
 (H) GAS SYSTEM - SEE P&ID PLAN  
 (I) GAS SYSTEM - SEE P&ID PLAN  
 (J) GAS SYSTEM - SEE P&ID PLAN  
 (K) GAS SYSTEM - SEE P&ID PLAN  
 (L) GAS SYSTEM - SEE P&ID PLAN  
 (M) GAS SYSTEM - SEE P&ID PLAN  
 (N) GAS SYSTEM - SEE P&ID PLAN  
 (O) GAS SYSTEM - SEE P&ID PLAN  
 (P) GAS SYSTEM - SEE P&ID PLAN  
 (Q) GAS SYSTEM - SEE P&ID PLAN  
 (R) GAS SYSTEM - SEE P&ID PLAN  
 (S) GAS SYSTEM - SEE P&ID PLAN  
 (T) GAS SYSTEM - SEE P&ID PLAN  
 (U) GAS SYSTEM - SEE P&ID PLAN  
 (V) GAS SYSTEM - SEE P&ID PLAN  
 (W) GAS SYSTEM - SEE P&ID PLAN  
 (X) GAS SYSTEM - SEE P&ID PLAN  
 (Y) GAS SYSTEM - SEE P&ID PLAN  
 (Z) GAS SYSTEM - SEE P&ID PLAN



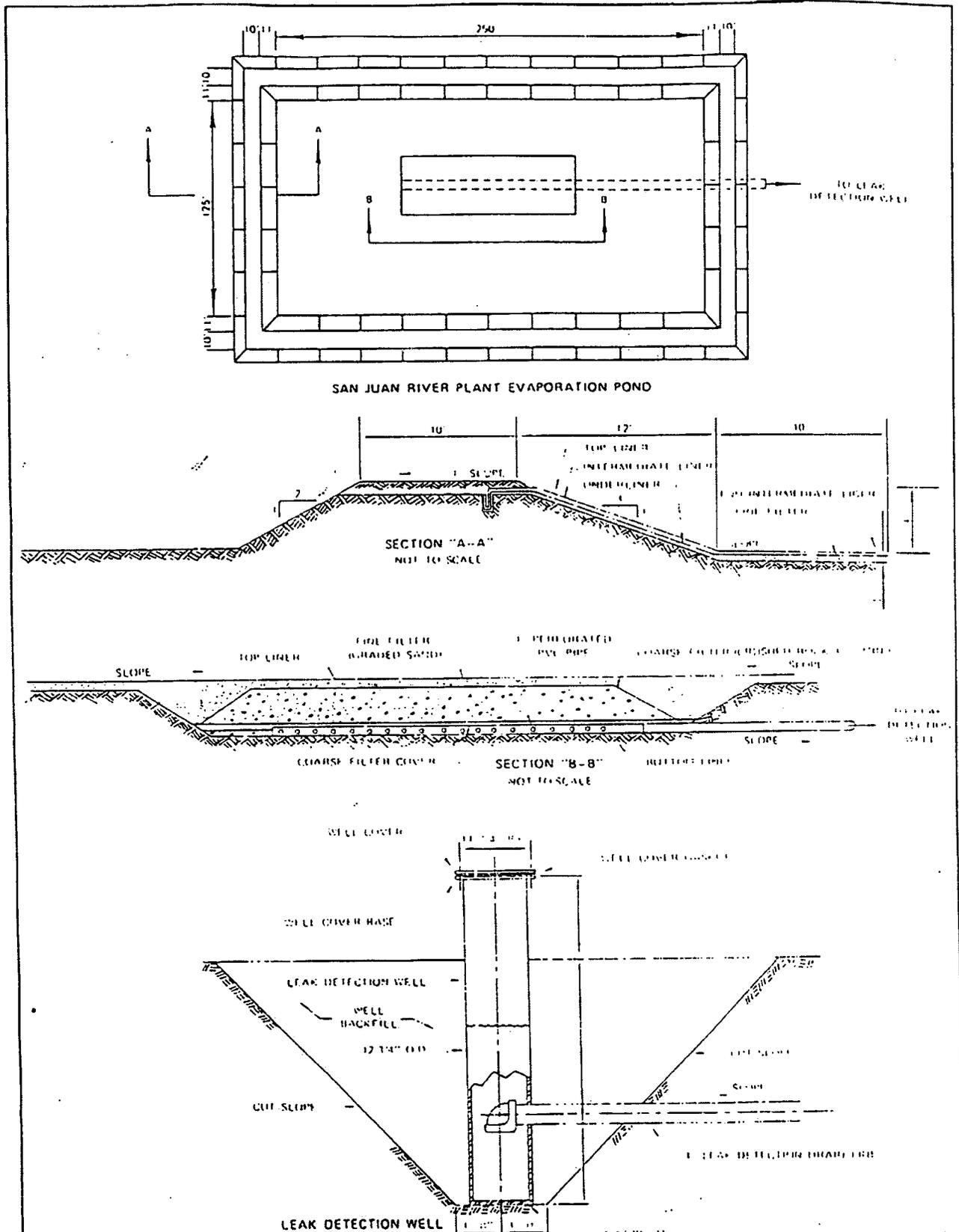


**FIGURE 4 - EVAPORATION POND DESIGN FIGURE 2B**



<p><b>DISCHARGE PLAN</b></p> <p><b>WESTERN GAS RESOURCES, INC.</b>  <b>SAN JUAN RIVER PLANT</b>          San Juan County, New Mexico</p> <p>September, 1991</p> <p>Modified from          El Paso Natural Gas Company          Discharge Plan</p>	<p><b>EVAPORATION POND DESIGN</b></p> <p>Figure 2B</p>
<p>Scale: None</p>	

**FIGURE 5 – EVAPORATION POND DESIGN FIGURE 2C**



<p align="center"> <b>DISCHARGE PLAN</b>  <b>WESTERN GAS RESOURCES, INC.</b>  <b>SAN JUAN RIVER PLANT</b>          San Juan County, New Mexico          September, 1991       </p>	<p align="center"> <b>EVAPORATION POND DESIGN</b>           Figure 2C       </p>
<p align="center">         Modified from          El Paso Natural Gas Company          Discharge Plan       </p>	<p align="center">         Scale: None       </p>

**APPENDIX A - ANALYTICAL RESULTS**



**EPA METHOD 8015 Modified  
Nonhalogenated Volatile Organics  
Total Petroleum Hydrocarbons**

Client:	Anadarko	Project #:	92187-0008
Sample ID:	Inlet Water to Pond South	Date Reported:	09-08-10
Laboratory Number:	55790	Date Sampled:	09-07-10
Chain of Custody No:	10310	Date Received:	09-07-10
Sample Matrix:	Aqueous	Date Extracted:	09-07-10
Preservative:	Cool	Date Analyzed:	09-08-10
Condition:	Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
<b>Gasoline Range (C5 - C10)</b>	<b>1.3</b>	<b>0.2</b>
<b>Diesel Range (C10 - C28)</b>	<b>ND</b>	<b>0.1</b>
<b>Total Petroleum Hydrocarbons</b>	<b>1.3</b>	

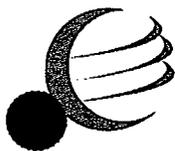
ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **San Juan River Plant**

Analyst

Review



**EPA Method 8015 Modified**  
**Nonhalogenated Volatile Organics**  
**Total Petroleum Hydrocarbons**

**Quality Assurance Report**

Client:	QA/QC	Project #:	N/A
Sample ID:	0908TBLK QA/QC	Date Reported:	09-08-10
Laboratory Number:	55790	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-08-10
Condition:	N/A	Analysis Requested:	TPH

	I-Cal/RF	C-Cal/RF	% Difference	Accept. Range
Gasoline Range C5 - C10	1.0000E+000	9.9800E-001	0.20%	0 - 15%
Diesel Range C10 - C28	1.0000E+000	9.9800E-001	0.20%	0 - 15%

Blank Conc. (mg/L)	Concentration	Detection Limit
Gasoline Range C5 - C10	0.8	0.2
Diesel Range C10 - C28	5.1	0.1
Total Petroleum Hydrocarbons	5.9	

Duplicate Conc. (mg/L)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	1.3	1.2	7.7%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

Spike Conc. (mg/L)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	1.3	25.0	27.1	103%	75 - 125%
Diesel Range C10 - C28	ND	25.0	25.0	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for Sample 55790

  
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Analyst

  
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**EPA METHOD 8021  
AROMATIC VOLATILE ORGANICS**

Client:	Anadarko	Project #:	92187-0008
Sample ID:	Inlet Water to Pond South	Date Reported:	09-08-10
Chain of Custody:	10310	Date Sampled:	09-07-10
Laboratory Number:	55790	Date Received:	09-07-10
Sample Matrix:	Aqueous	Date Analyzed:	09-07-10
Preservative:	Cool	Analysis Requested:	BTEX
Condition:	Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	144	1	0.2
Toluene	538	1	0.2
Ethylbenzene	66.4	1	0.2
p,m-Xylene	664	1	0.2
o-Xylene	192	1	0.1
<b>Total BTEX</b>	<b>1,600</b>		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	fluorobenzene	98.1 %
	1,4-difluorobenzene	104 %
	4-bromochlorobenzene	99.0 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **San Juan River Plant**

Analyst

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# envirotech

Analytical Laboratory

## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	N/A	Project #:	N/A
Sample ID:	0907BBLK QA/QC	Date Reported:	09-08-10
Laboratory Number:	55788	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-07-10
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept. Range: 0 - 15%			
Benzene	7.6647E+006	7.6877E+006	0.3%	ND	0.2
Toluene	4.2257E+006	4.2384E+006	0.3%	ND	0.2
Ethylbenzene	3.2634E+006	3.2733E+006	0.3%	ND	0.2
p,m-Xylene	7.4980E+006	7.5205E+006	0.3%	ND	0.2
o-Xylene	2.5141E+006	2.5217E+006	0.3%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff	Accept Limit
Benzene	495	492	0.7%	0 - 30%
Toluene	1560	1550	0.7%	0 - 30%
Ethylbenzene	133	129	2.9%	0 - 30%
p,m-Xylene	766	757	1.2%	0 - 30%
o-Xylene	333	321	3.6%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	495	50.0	547	100%	39 - 150
Toluene	1560	50.0	1610	100%	46 - 148
Ethylbenzene	133	50.0	213	116%	32 - 160
p,m-Xylene	766	100	804	92.8%	46 - 148
o-Xylene	333	50.0	383	99.8%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.  
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for Samples 55788-55790

Analyst

Review



Client:	Anadarko	Project #:	92187-0008
Sample ID:	Inlet Water to Pond South	Date Reported:	09-08-10
Laboratory Number:	55790	Date Sampled:	09-07-10
Chain of Custody:	10310	Date Received:	09-07-10
Sample Matrix:	Aqueous	Date Analyzed:	09-08-10
Preservative:	Cool		
Condition:	Intact		

Parameter	Analytical Result	Units		
pH	8.17	s.u.		
Conductivity @ 25° C	2,780	umhos/cm		
Total Dissolved Solids @ 180C	1,990	mg/L		
Total Dissolved Solids (Calc)	2,310	mg/L		
SAR	39.6	ratio		
Total Alkalinity as CaCO3	1,900	mg/L		
Total Hardness as CaCO3	87.5	mg/L		
Bicarbonate as CaCO3	1,900	mg/L	31.14	meq/L
Carbonate as CaCO3	<0.1	mg/L	0.00	meq/L
Hydroxide as CaCO3	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.300	mg/L	0.00	meq/L
Nitrite Nitrogen	0.011	mg/L	0.00	meq/L
Chloride	270	mg/L	7.62	meq/L
Fluoride	<0.1	mg/L	0.00	meq/L
Phosphate	1.91	mg/L	0.06	meq/L
Sulfate	<0.1	mg/L	0.00	meq/L
Iron	0.008	mg/L	0.00	meq/L
Calcium	27.0	mg/L	1.35	meq/L
Magnesium	4.88	mg/L	0.40	meq/L
Potassium	0.950	mg/L	0.02	meq/L
Sodium	852	mg/L	37.06	meq/L
Cations			38.84	meq/L
Anions			38.82	meq/L
Cation/Anion Difference			0.03%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

  
\_\_\_\_\_  
Analyst

  
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Review



**APPENDIX B - R 11**



# **H<sub>2</sub>S CONTINGENCY PLAN**

**San Juan River Gas Plant  
Kirtland, New Mexico**

**WESTERN GAS RESOURCES ASSET HOLDING  
COMPANY, LLC, a wholly owned subsidiary of Anadarko  
Petroleum Corporation**

**(SEPTEMBER 2009)**

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## **APPENDICES**

Appendix A – Worst Case Scenario for H<sub>2</sub>S Release

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Appendix E – Description of Emergency Response Equipment

Appendix F – H<sub>2</sub>S Contingency Plan - Response Flow Diagram(s)

Appendix G – Emergency Call List

Appendix H – H<sub>2</sub>S Plan Distribution List

## I. INTRODUCTION

The San Juan River Gas Plant (hereinafter the "Plant") is a natural gas processing plant which handles and/or generates hydrogen sulfide and/or sulfur dioxide; therefore this Hydrogen Sulfide Contingency Plan (the "H<sub>2</sub>S Plan" or "the Plan") has been developed: 1) to satisfy the New Mexico Oil Conservation Division Rule 11, 2) to conform with API "Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide," RP 55, and 3) to create a site-specific hydrogen sulfide contingency plan that outlines the emergency response procedures that will be implemented to ensure a coordinated, efficient and immediate action plan for alerting and protecting operating personnel and the public as well as to prevent or minimize environmental hazards and damage to property. The terms used in this Plan are to be used in the same manner as defined in Title 19 Chapter 15 Part II of the New Mexico Administrative code (19.15.11.7- Definitions) unless otherwise defined herein.

### A. PLANT DESCRIPTION & MAP (Figure 1)

The Plant is located in Kirtland, San Juan County, New Mexico and encompasses 300+ acres. It is owned and operated by Western Gas Resources Asset Holding Company LLC, which is a wholly owned subsidiary of Anadarko Petroleum Corporation (hereinafter collectively referred to as the Company).

More specifically, the Plant is located in Section 1, Township 29N, Range 15 W in Kirtland, San Juan County, New Mexico.

1. Its coordinates are:

**Latitude: 36.453 N                      Longitude: 108.220 W**

2. Its physical address is:

99 County Road 6500, Kirtland, New Mexico 87417

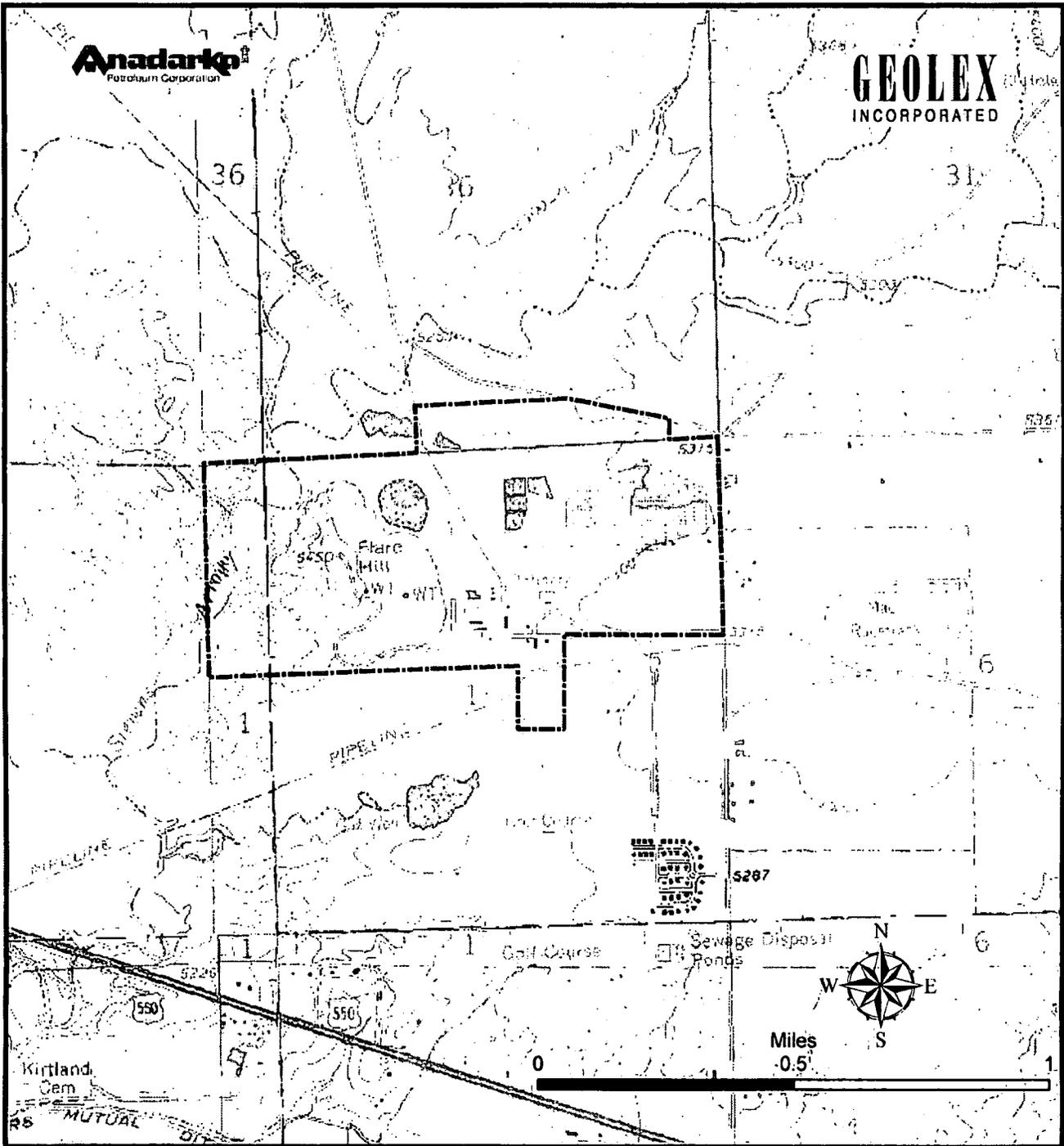
3. Its mailing address is:

P. O. Box 70, Kirtland, New Mexico 87417

4. Driving Directions from Farmington, New Mexico to the Plant:

From the intersection of US Highway 64 and the LaPlata Highway (New Mexico Highway 170), travel west on US Highway 64 approximately 6.2 miles to the intersection of US Hwy 64 and County Road 6500 in Kirtland, New Mexico. Turn right on County Road 6500 and travel north approximately 1.7 mile to the entrance to the San Juan River Gas Plant.

**The location of the Plant is illustrated herein on Figure 1.**



**Approximate Boundaries of Western Gas Resources Property  
Anadarko San Juan River Natural Gas Processing Plant**

## **B. DESCRIPTION OF OPERATIONS**

1. The Plant operations include gas processing, conditioning and compression, as well as flow lines and storage tanks. The Plant gathers produced natural gas from San Juan County, New Mexico, as well as, from Southwestern Colorado, Northeastern Arizona, and Southeastern Utah. Once gathered at the Plant, the produced natural gas is compressed; treated in an amine process for the removal of carbon dioxide and hydrogen sulfide; and dehydrated to remove the water content. The processed natural gas is then sold and shipped to various customers.
2. Because the natural gas that gathered at the Plant contains hydrogen sulfide ("sour gas"), it must be treated or processed to remove these and other impurities. The carbon dioxide and hydrogen sulfide (H<sub>2</sub>S) stream that is removed from the natural gas in the amine treating process is then sent to the Claus sulfur recovery unit whereby sulfur is removed, which results in the generation of molten elemental sulfur. Any residual H<sub>2</sub>S is routed to an incinerator where it is combusted into sulfur dioxide.

## **II. THE PLAN**

### **A. RESPONSIBILITY FOR CONFORMANCE WITH THE H<sub>2</sub>S PLAN**

It is the responsibility of all personnel on-site to follow the safety and emergency procedures outlined in the Hydrogen Sulfide Contingency Plan (the H<sub>2</sub>S Plan) as well as the following documents:

- Anadarko Petroleum Corporation Safety & Health Manual
- Anadarko Petroleum Corporation Emergency Response & Oil Spill Contingency Plan; and
- Anadarko Petroleum Corporation Environmental Policies and Programs.

### **B. REVISIONS TO THE PLAN**

The H<sub>2</sub>S Plan will be reviewed annually and revised at this time as necessary to address changes to the Plant facilities, operations, or training requirements, contact information and the public areas including roads, businesses, or residents potentially affected by the operations of the Plant, specifically those areas within the radii-of-exposure.

### **C. AVAILABILITY OF THE H<sub>2</sub>S PLAN**

The H<sub>2</sub>S Plan shall be available to all personnel responsible for implementation, regardless of their normal location assignment. A copy of the Plan will be maintained at the Plant in the Plant Superintendent's office and at the Anadarko Corporate Headquarters in The Woodlands, Texas. **See Appendix H for the H<sub>2</sub>S Distribution List**, which lists all the additional entities that have been provided a copy of the H<sub>2</sub>S Plan.

## D. CONTENT OF THE PLAN

At a minimum, the H<sub>2</sub>S Plan will contain information regarding: 1) the emergency procedures to be followed in the event of an H<sub>2</sub>S or SO<sub>2</sub> release that may pose a threat to the Plant, public or public areas, 2) the characteristics of H<sub>2</sub>S and SO<sub>2</sub>, 3) a facility description, map and/or drawings, and 4) information regarding training and drills to be conducted related to this Plan.

## III. PLAN DESIGN CONSIDERATIONS

### A. CHARACTERISTICS OF H<sub>2</sub>S, SO<sub>2</sub> AND CARBON DIOXIDE

#### 1. Hydrogen Sulfide (H<sub>2</sub>S)

The current inlet gas streams into the Plant contain approximately 3,500 ppm (or 0.35 mole percent) of hydrogen sulfide based on data generated from the sampling of the inlet gas at least three times daily.

Hydrogen sulfide is a colorless, toxic and flammable gas, and has the odor of rotten eggs. Hydrogen sulfide gas is heavier than air.

Hydrogen sulfide presents a significant health hazard by paralyzing the respiratory system resulting in serious injury or death.

<b>Hydrogen Sulfide Properties &amp; Characteristics</b>	
CAS No.	7783-06-4
Molecular Formula	H <sub>2</sub> S
Molecular Weight	34.082
TWA	10 ppm
STEL	15 ppm
IDLH	100 ppm
Specific Gravity (air = 1.0)	1.189
Boiling Point	-76.5°F
Freezing Point	-121.8°F
Vapor Pressure	396 psia
Autoignition Temperature	518°F
Lower Flammability Limit	4.3%
Upper Flammability Limit	46.0%
Stability	Stable
pH in water	3
Corrosivity	Reacts with metals, plastics, tissues & nerves

<b>Physical Effects of Hydrogen Sulfide</b>		
<b>Concentration</b>		<b>Physical Effect</b>
<b>ppm</b>	<b>%</b>	
1	.00010	Can be smelled (rotten egg odor)
10	0.0010	Obvious & unpleasant odor; Permissible Exposure Limit; Safe for 8-hour exposure
15	0.0015	Short Term Exposure Limit (STEL); Safe for 15 minutes of exposure without respirator
50	0.0050	Loss of sense of smell in 15 minutes
100	0.0100	Immediately Dangerous to Life & Health (IDLH); Loss of sense of smell in 3-15 minutes; Stinging in eyes & throat; Altered breathing
200	0.0200	Kills smell rapidly; Stinging in eyes & throat
500	0.0500	Dizziness; Unconscious after short exposure; Need artificial respiration
700	0.0700	Unconscious quickly; death will result if not rescued promptly
1,000	0.1000	Instant unconsciousness; followed by death within minutes

## 2. Sulfur Dioxide (SO<sub>2</sub>)

Sulfur dioxide is produced as a by-product of H<sub>2</sub>S combustion at the incinerator. The incinerator unit receives the residual hydrogen sulfide and carbon dioxide stream that is routed from the amine unit.

It is colorless, transparent, and is non-flammable, with a pungent odor associated with burning sulfur.

Sulfur dioxide is heavier than air, but will be picked up by a breeze and carried downwind at elevated temperatures. Sulfur dioxide can be extremely irritating to the eyes and mucous membranes of the upper respiratory tract.

<b>Sulfur Dioxide Properties &amp; Characteristics</b>	
CAS No.	7446-09-5
Molecular Formula	SO <sub>2</sub>
Molecular Weight	64.07
TWA	2 ppm
STEL	5 ppm
IDLH	100 ppm
Specific Gravity (air = 1.0)	2.26
Boiling Point	14°F
Freezing Point	-103.9°F
Vapor Pressure	49.1 psia
Autoignition Temperature	N/A
Lower Flammability Limit	N/A
Upper Flammability Limit	N/A
Stability	Stable
Corrosivity	Could form an acid rain in aqueous solutions

<b>Physical Effects of Sulfur Dioxide</b>	
<b>Concentration</b>	<b>Effect</b>
1 ppm	Pungent odor, may cause respiratory changes
2 ppm	Permissible exposure limit; Safe for an 8 hour exposure
3-5 ppm	Pungent odor; normally a person can detect sulfur dioxide in this range
5 ppm	Short Term Exposure Limit (STEL); Safe for 15 minutes of exposure
12 ppm	Throat irritation, coughing, chest constriction, eyes tear and burn
100 ppm	Immediately Dangerous To Life & Health (IDLH)
150 ppm	So irritating that it can only be endured for a few minutes
500 ppm	Causes a sense of suffocation, even with first breath
1,000 ppm	Death may result unless rescued promptly.

### 3. Carbon Dioxide

The current inlet gas streams to the Plant contain approximately 3% carbon dioxide based on continuous inlet gas monitoring readings.

Carbon dioxide gas is colorless, odorless, and non-flammable. Carbon dioxide is heavier than air.

<b>Carbon Dioxide Properties &amp; Characteristics</b>	
CAS No.	124-38-9
Molecular Formula	CO <sub>2</sub>
Molecular Weight	44.010
TWA	5,000 ppm
STEL	30,000 ppm
IDLH	40,000 ppm
Specific Gravity (air = 1.0)	1.5197
Boiling Point	-109.12°F
Freezing Point	-69.81°F
Vapor Pressure	830 psia
Autoignition Temperature	N/A
Lower Flammability Limit	N/A
Upper Flammability Limit	N/A
Stability	Stable
pH in saturated solution	3.7
Corrosivity	dry gas is relatively inert & not corrosive; can be corrosive to mild steels in aqueous solutions

<b>Physical Effects of Carbon Dioxide</b>	
<b>Concentration</b>	<b>Effect</b>
1.0 %	Breathing rate increases slightly
2.0 %	Breathing rate increases to 50% above normal level. Prolonged exposure can cause headache, tiredness
3.0 %	Breathing rate increases to twice normal rate and becomes labored. Weak narcotic effect. Impaired hearing, headache, increased blood pressure and pulse rate
4 – 5 %	Breathing increases to approximately four times normal rate, symptoms of intoxication become evident, and slight choking may be felt
5 – 10 %	Characteristic sharp odor noticeable. Very labored breathing, headache, visual impairment, and ringing in the ears. Judgment may be impaired, followed within minutes by loss of consciousness
10 – 100 %	Unconsciousness occurs more rapidly above 10% level. Prolonged exposure to high concentrations may eventually result in death from asphyxiation

## **B. RADII OF EXPOSURE (ROE)**

For the existing operations, the "Radius of Exposure" for both 500-ppm and 100-ppm of H<sub>2</sub>S gas was determined using the "escape rate", which is calculated using the maximum daily rate of the gaseous mixture that is handled by the Plant. The rates and other variables used to calculate the ROE is discussed in greater detail in **Appendix B - ROE calculations**. Also refer to **Appendix C - map showing 500-ppm ROE and the 100-ppm ROE**.

<b>500-ppm ROE</b>	<b>933 feet</b>
<b>100-ppm ROE</b>	<b>2,042 feet</b>

## **IV. EMERGENCY ACTION PROCEDURES**

### **A. EMERGENCY RESPONSE ORGANIZATION**

The Plant uses the Incident Command System (ICS) for emergency response. The ICS structure used is based on the National Interagency Incident Management System (NIIMS), and is consistent with the National Contingency Plan (NCP).

In the event of an accidental release that results in the activation of the H<sub>2</sub>S Plan and all personnel have been evacuated out of the affected area, the Plant Superintendent, or his designee, will be the On-Scene Incident Commander (IC in this Plan). The IC will contact and coordinate with Anadarko's management in corporate office. If the severity of the response requires activation of the Emergency Response Center in The Woodlands, Texas office, the ICS structure will be staffed per the Anadarko Southern Region Emergency Response & Oil Spill Contingency Plan Manual. The staffing will not change the H<sub>2</sub>S Plan contained herein.

The Plant Superintendent or his designee shall determine:

- 1) Plant Shutdowns
- 2) Isolation of pipeline segments
- 3) Repairs, tests or restarts as required

If an emergency occurs, the Plant Superintendent, or his designee, shall be notified first. The Plant Superintendent, or his designee, shall notify Anadarko's Office in The Woodlands, Texas

### **B. EMERGENCY RESPONSE**

This section explains the procedures and decision to be used in the event of an H<sub>2</sub>S release; much of which has been pre-determined to ensure a coordinated, efficient and

immediate action plan for alerting and protecting operating personnel and the public as well as to prevent or minimize environmental hazards and damage to property.

## 1. OBJECTIVE

All Plant employees shall be prepared to respond to an H<sub>2</sub>S or SO<sub>2</sub> emergency at the Plant. Emergency response actions may be taken for a variety of situations that may occur in the Plant. The Plan is activated in progressive levels based on the concentration of H<sub>2</sub>S that has been released. The Plant has three (3) activation levels that are described below and in detail in the Response Flow diagram in Appendix F.

**Level 1** – Intermittent alarm sounded and/or flashing red beacons activated for H<sub>2</sub>S greater than 10 ppm

**Level 2** – Continuous alarm sounded and/or flashing red beacons activated for H<sub>2</sub>S greater than 20 ppm

**Level 3** – Catastrophic release; fire; explosion; a continuous release of maximum volume for 24 hours; or Rule 11 Mandatory Activation for 100 ppm in any defined public area; 500 ppm at any public road; or 100 ppm at a distance greater than 3000 feet from the site or the release

As soon as the Plan has been activated based on the criteria above, the Plant Superintendent, or his designee, should be notified.

## 2. PLANT EVACUATION AND EMERGENCY ASSEMBLY AREAS

- A. Plant evacuation for all visitors and Plant personnel that are not operators begins at the 10 ppm H<sub>2</sub>S intermittent alarm and/or flashing red beacon. The Plant operators are to put on the 30-min SCBA and first determine if any personnel are in distress and assist any distressed personnel evacuate to Emergency Assembly Area 1. Emergency services (911) will be contacted if there are injuries or as otherwise deemed necessary. BHP Mines and Praxair are also to be notified. The operators will then, wearing the SCBA, investigate the cause of the release. At the sound of the alarm and/or flashing red beacons, all other personnel in the Plant are to stop work, check the prevailing wind direction and immediately proceed along designated evacuation routes and/or upwind to the pre-designated Emergency Assembly Area(s) that are described in **Appendix F**.

Prevailing winds for the area are from the east and evacuation along the designated routes should be upwind. If the designated evacuation route is downwind of the release (based on the windsock), then all evacuees should proceed upwind to the Emergency Assembly Areas

The Plant evacuation diagram showing evacuation routes and Emergency Assembly Areas is attached in **Appendix D**.

**The Emergency Assembly Area 1 is:**

**Parking Area on the eastside of the Plant Superintendent Office Building (see Appendix C & D)**

**The Emergency Assembly Area 2 is:**

**Area at Plant Rd and Hwy 6500  
(see Appendix C)**

**The Emergency Assembly Area 3 is:**

**Kirtland Elementary School Parking Lot , 30 Road 6446  
(see Appendix C)**

- B. Roll call shall be conducted at the Emergency Assembly Area to assure all personnel have evacuated safely. This facility is a PSM facility and requires all visitors check in before entering the Plant, thus the check-in sheet will be used at the Emergency Assembly Areas to make a full accounting of all personnel and visitors.

### **3. IMMEDIATE ACTION PLAN/ INITIAL RESPONSE**

The following outlines the immediate action plan that is illustrated by flow diagram in **Appendix F**. This is to be used when responding to an H<sub>2</sub>S release. Additional or long term response actions will be determined on a case-by-case basis, if needed, once the Incident Command Center and System is established following the immediate response.

#### **LEVEL 1 RESPONSE**

1. The audible signal for a Plant emergency and evacuation is an intermittent horn (repeating off/on) activated when levels of H<sub>2</sub>S of 10 ppm are detected. The frequency of this intermittent alarm will increase as the concentration of the H<sub>2</sub>S increases. In addition, a flashing red light or beacon will be activated at 10 ppm H<sub>2</sub>S. At the initial sound of the intermittent alarm or the flashing red beacon, each operator (2 per shift) will put on a 30 minute SCBA and all other personnel in the Plant complex shall immediately evacuate the Plant using the evacuation routes to the Emergency Assembly Area 1 (see **Appendix D**). The operators, upon suit up with the SCBA, will first help any persons in distress evacuate to the

Emergency Assembly Area. If deemed necessary by the Senior Operator, local emergency response service providers will be contacted by Plant personnel designated by the Senior Operator.

2. BHP Mines and Praxair will be notified of a release by personnel designated by the Plant Superintendent or his designee. The nature of the release and status of containment will be conveyed. Both will be advised to report the incident to employees working near the Plant and to alert any third party contractors or service companies working in the Plant vicinity or imminently scheduled to work in the Plant vicinity, of the release. All should be instructed to leave the area and not to enter/re-enter area until further notice.
3. Wearing the SCBA, the operator(s) will attempt to fix the cause of the release. OSHA guidelines allow operators to work in areas with 10ppm for up to 8 hours. The H<sub>2</sub>S levels at the Emergency Assembly Area 1 will be monitored with a hand held or personal monitor.
4. The Senior Operator will set up secondary re-entry team(s) with 30 min. SCBA to re-enter and resolve the situation. Re-entry will occur in 15 minute shifts at the direction of the IC until the problem is resolved or the ESD activated. If H<sub>2</sub>S levels in Emergency Assembly Area 1 exceed 10 ppm, evacuate to Emergency Assembly Area 2 and continue to monitor Assembly Area H<sub>2</sub>S level. If release is resolved and monitored levels in the Plant are less than 10 ppm, personnel may re-enter to Plant. BHP and Praxair will be notified once release is contained and monitored H<sub>2</sub>S levels are less than 10 ppm. The OCD shall be notified within one hour of any release that activates the Plan. If the release is not resolved and H<sub>2</sub>S levels continue to increase, Level 2 Response is indicated.

## **LEVEL 2 RESPONSE**

1. The continuous alarm and indicates the detection of H<sub>2</sub>S greater than 20 PPM. Flashing red beacons indicate a H<sub>2</sub>S release of 10 ppm or greater and they will continue for a release of 20 ppm or greater. At the initial sound of the continuous alarm or observance of the flashing red beacons, the operators will immediately put on a 30 minute SCBA and all other personnel in the Plant complex will put on emergency escape packs if they are wearing them and evacuate along with all other personnel using the evacuation routes to the Emergency Assembly Area 2 (see **Appendix D**). The operators, upon suit up with the SCBA, will first help any persons in distress evacuate to the Emergency Assembly Area. If deemed necessary by the Senior Operator, local emergency response service providers will be contacted by Plant personnel as designated by the Senior Operator.
2. Praxair is trained to evacuate at continuous alarm sounds. Praxair, BHP Mines and other non-manned businesses will be contacted by phone and notified of release and asked to evacuate, if they have not already. All entities within the 100 ppm ROE will be contacted by phone and notified of release. The nature of the

release and status of containment will be conveyed. Notifications will include but are not limited to the following:

- Praxair, BHP and all unmanned businesses will be instructed to alert all company personnel, third party contractors and/or services companies working in the area and those imminently scheduled to work in the area, of the release and evacuation status of the Plant. They should be instructed to immediately leave and/or not enter/re-enter the Plant vicinity until further instruction.
- BHP will be advised to check ventilation shaft status within the Plant vicinity and take internal company pre-emptive safety action(s) as deemed appropriate.
- Riverview Golf Course will be instructed to clear the course of both employees and golfers until further notice.
- San Juan College will be notified of the release though not within the 100 ppm ROE.

The LEPC and law enforcement will be contacted by phone and notified of the release. The Plant Superintendent or his designee will assign personnel notification responsibility.

3. Operator(s) with 30 minute SCBA to assess and attempt to resolve. After 15 minutes and no resolution, the operator(s) will activate the ESD and will evacuate to Emergency Assembly Area 2.
4. If monitored H<sub>2</sub>S levels at Emergency Assembly Area 2 exceed 10 ppm, evacuate to Emergency Assembly Area 3, Kirtland Elementary School parking lot. If deemed necessary, local emergency response service providers will be contacted by the operator.
  - a) Re-entry will occur in full SCBA and in 15 minute shifts at the direction of the IC until IC determines problem has been resolved or additional ESD (pipeline) activated.
  - b) If release is resolved and monitored levels of H<sub>2</sub>S in the Plant are less than 10 ppm, personnel may return to Plant. The OCD shall be notified within one hour of any release that activates the Plan. All businesses previously notified will be informed that the release has been resolved and advised of the current monitored H<sub>2</sub>S levels at the Plant.
  - c) No resolution requires activation of full H<sub>2</sub>S Plan with notifications and reporting as per Plan. If the release is not resolved and/or H<sub>2</sub>S levels continue to increase, Level 3 Response is indicated.

### **LEVEL 3 RESPONSE**

1. For H<sub>2</sub>S at 20 ppm or greater at Assembly Area 2, repair efforts at Level 2 unsuccessful, worst case scenario, and/or catastrophic release have occurred then implement a Level 3 response.
2. All personnel shall have evacuated to Emergency Assembly Area 3, Kirtland Elementary School. Evacuation of Praxair has been confirmed. Implement full H<sub>2</sub>S plan with all notifications and public agency involvement. Notifications to area businesses, both manned and unmanned will include the nature of the release and status of containment. Notifications will include but are not limited to the following:
  - Praxair, BHP and all unmanned businesses will be instructed to immediately alert all company personnel, third party contractors and/or services companies working in the area and those imminently scheduled to work in the area, of the release and evacuation status of the Plant. They should be instructed to immediately leave and/or not enter/reenter the Plant vicinity until further instruction. All shall be informed of the road block on County Road 6500.
  - BHP will be advised to check ventilation shaft status within the Plant vicinity and take internal company pre-emptive safety action(s) as deemed appropriate.
  - Riverview Golf Course will be instructed to immediately clear the course of both employees and golfers and shelter in-place at the club house until otherwise advised.
  - San Juan College will be notified of the release and advised to shelter in place until otherwise advised.
3. If escaping vapors have been ignited, the vapors should be allowed to continue to burn unless the fire endangers personnel, other property, or other equipment.
4. When applicable: Maintain communication with the Plant Superintendent, or his designee, to keep him up-to-date of the situation and the action taken prior to his arrival at the location.
5. Initiate and maintain a Chronological Record of Events log.
6. Within one hour after the activation of the H<sub>2</sub>S Plan, begin agency notifications by calling OCD and NRC.
7. Establish media staging area adjacent to Assembly Area 3 and direct all media to it.

8. Once resolved and monitored levels in the Plant are less than 10 ppm, return to Plant. All businesses previously notified will be informed that the release had been resolved and advised of the current monitored H<sub>2</sub>S levels at the Plant.
9. Agency reports to be submitted as required.

#### **4. EMERGENCY SHUTDOWN SYSTEM**

The Plant has an extensive Emergency Shut Down (ESD) system that is located within the Plant and in various locations along the pipelines that feed the Plant. The ESD is designed to prevent a Level 3 response. See **Appendix E** for a more detailed description of the ESD.

#### **5. NOTIFICATIONS AND REPORTS**

The Plant has various notification and reporting obligations. Some are related to its state air quality permit that is overseen by NMED as well as state and federal spill reporting obligations. In addition to the regulatory obligations noted above, Plant personnel also have internal and external notification and reporting obligations associated with the activation of this Plan.

##### **A. DISCOVERY AND INTERNAL REPORTING**

1. All Plant personnel who perform maintenance and/or repair work within the Plant wear H<sub>2</sub>S monitoring devices to assist them in detecting the presence of unsafe levels of H<sub>2</sub>S. When any Plant personnel while performing such work discovers a leak or emission release they are to attempt to resolve the issue as long as H<sub>2</sub>S levels remain below 10 ppm. The personal monitoring devices they wear will give off an audible alarm at 10 ppm. These devices are to be worn as low on the body as possible since H<sub>2</sub>S is heavier than air and will tend to stand or accumulate in low lying areas. If the response action needed to resolve the issue is more than simply closing a valve or stopping a small leak, the Plant personnel shall notify the Plant Superintendent, or his designee and convey, at a minimum, the following information:
  - Name, telephone number, and location of person reporting the situation; and
  - Type and severity of the emergency; and
  - Location of the emergency (area/block, mile markers, latitude & longitude, or building), and the distance to surrounding equipment and/or structures; and

- The cause of the spill or leak, name and quantity of material released, and extent of the affected area including the degree of environmental hazard; and
  - Description of injuries and report of damage to property and structures; and
  - Initiate and maintain a Chronological Record of Events log. This record should record the time, date, and a summary of the event.
2. If the Plant personnel detects H<sub>2</sub>S levels greater than 10 ppm either as a result of his/her personal monitoring device or the Plant intermittent alarm and/or red flashing beacon, Plant operators are to contact their immediate supervisor for assistance and put on the 30-min SCBA so they can attempt to resolve the issue. All non essential persons shall be notified of the release and evacuated from the area. Operators wearing the SCBAs are to first assist any persons requiring assistance during the evacuation, then attempt to resolve the issue. The immediate supervisor is then responsible for notifying the Plant Superintendent or his designee so that the IC system can be implemented and H<sub>2</sub>S Plan activated if necessary.
  3. Once the Plant Superintendent is contacted, he or his designee is to notify the appropriate Corporate management, EHS personnel, Plant emergency response personnel, and advise them of the existing emergency situation. Corporate management will then conduct the reporting up that is necessary based on the situation.
  4. Plant personnel are to advise any contractor, service company, and all others on-site or attempting to enter the Plant that the H<sub>2</sub>S Plan has been activated.

## **B. PUBLIC AWARENESS AND COMMUNICATION**

Public awareness and communication is a primary function of the H<sub>2</sub>S Plan. Company has compiled a list of various public, private, state, local contacts that are to be notified at various phases during the activation of the Plan. Refer to the Response Flow diagram in **Appendix F** that indicates when certain entities are to be contacted in event of activation of this Plan. **Appendix G** is a listing of the entities to be contacted and **Appendix H** is a list of community organizations that have received a copy of the Plan. Company will inform all state and local response organizations on its Plan as well as those businesses that fall within its 500-ppm and 100-ppm ROE as illustrated in **Appendix C**.

## **C. PUBLIC AREAS, NEARBY BUSINESSES AND RESIDENTS**

The contact information for all residents, businesses and public areas is contained in **Appendix G**. All businesses and public places within the 500 ppm and 100 ppm radius of exposure will be contacted by Plant personnel as designated by Plant

Superintendent if the Plan is activated and based on response level as described in the Immediate Action Plan and advised of the following:

- The nature and extent of the release/emergency at the Plant and recommendations for protective actions, such as evacuation or shelter-in-place
- Any other event specific information that is necessary to protect the public
- Updates as to the status of the release and continued safety measures to be taken, including but not limited to when to evacuate and/or when it is safe to return to the area.

1. Residences or Public roads:

There are no residences or public roads located within 500 ppm or the 100 ppm radius of exposures.

2. Businesses or Other Public Areas:

All businesses on this list will be provided with a copy of the H<sub>2</sub>S Plan and will be contacted about participation when local emergency response training events or drills occur.

**Within the 100 ppm ROE:**

There is **one** public area (a portion of the Riverview Golf Course) that is located within the 100 ppm radius of exposure.

BHP will be contacted when the Plan is activated to ensure that the out of service vent pipes have not been activated. Currently, no operating BHP Mining ventilation pipe ducts are within the 100 ppm ROE; however, out of service ventilation pipe ducts do exist and have been closed by manual valve.

Three unmanned businesses are located within the 100 ppm ROE (XTO, El Paso Natural Gas and Mapco Enterprises). Their corporate offices will be notified if the Plan is activated as per the immediate action plan.

**Within the 500 ppm ROE:**

There is one additional manned business (Praxair) within the 500-ppm ROE. Praxair is to be notified if the Plan is activated.

## 6. SITE SECURITY

- A. In order to have an accurate listing of all personnel on-site in the event of an emergency, a daily sign-in log sheet shall be utilized. The sign-in log sheet shall include at a minimum the person's name, the company name, the time of arrival, and the time of departure.

- B. The Incident Commander shall be responsible to assure that all personnel sign-in upon arrival and sign-out upon departure from the job site.
- C. The Incident Commander may at his discretion assign the responsibilities for the daily sign-in log sheet to the individual designated as the Record Keeper or another designee.
- D. At the discretion of the Incident Commander, a security coordinator and/or a security team may be established, and the access to the job site restricted.
- E. For a Level 3 release a road block would be set up at the entrance to the Plant at County Road 6500.

## **7. SIGNS & MARKERS**

The Plant has warning signs indicating the presence of H<sub>2</sub>S/Poisonous Gas and high pressure gas at the entrance to the Plant. Emergency response phone numbers are posted at the entrance to the Plant. Signs are located at the Plant gate entrance indicating that all visitors are to sign in.

## **8. FIRST-AID STATION**

The first aid station will be located at the Emergency Assembly Area.

### **FIRST AID KITS are located:**

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>Plant Superintendent Office Building,</b></li><li>• <b>Maintenance/Safety Office Building, and</b></li><li>• <b>Each company vehicle</b></li></ul> |
|---|

## **9. MEDIA SITE**

- A. If a Level 2 or 3 Response occurs, the Media Site will be located adjacent to Emergency Assembly Area 2, except for Level 3 response in which case it will be located adjacent to Emergency Assembly Area 3.
- B. At no time shall any unescorted representative from the media be allowed any closer to the Plant than the Media Site location, unless approved by the Incident Commander, the Safety Officer, and the Media Relations Officer.

## **10. EMERGENCY AND SAFETY EQUIPMENT**

Refer to **Appendix E** for information pertaining to the Plant's emergency and Safety equipment.

## IV. TRAINING AND DRILLS

### A. TRAINING

1. Training on the H<sub>2</sub>S Plan
  - Inclusion of local officials and LEPC
  - Public areas and businesses (within the ROE)
  - Those on the Plan distribution list
  
2. Other Emergency Response Related Training

Anadarko/Western has an extensive safety training program and addresses various aspects of job related hazards. All training records for the Plant are maintained at the Plant. The following is a limited list and summary of the training programs that relate to the H<sub>2</sub>S Plan and Emergency Response:

- Plant Orientation Training - All Plant personnel, visitors, and contractors must attend a Plant overview orientation prior to obtaining permission to enter the Plant. A refresher course on this training is required annually for all persons. This training also complies with the requirements of the Anadarko and Plant's Process Safety Management Program and Procedures Manuals.
  
- Hydrogen Sulfide and Sulfur Dioxide Training – All Plant personnel receive annual refresher training on hydrogen sulfide and sulfur dioxide, which is conducted by Anadarko personnel. If an individual is unable to attend, they may be required to attend a third party training session. Hydrogen sulfide training cards are issued as documentation of this training. All contract employees and visitors are required to have had hydrogen sulfide training and to provide the Plant a copy of their certification card prior to obtaining permission to enter the Plant.
  
- Respirators - All Plant personnel, with the exception of the Plant Operations Specialist, are trained annually on the proper use of respirators. In addition to the annual training, all Plant personnel with the exception noted above are fit tested annually on the respirators. Except for the Plant Operations Specialist, all Plant personnel must have medical clearance to work in the Plant. Medical clearance is mandatory for H<sub>2</sub>S certification. Medical clearance review for work in a H<sub>2</sub>S environment is conducted on a bi-annual basis unless the individual has experienced medical problems within that two year interval that requires updating the medical clearance.

- Hazard Communication - All Plant personnel are trained annually on Hazard Communication and SARA Title III Right-to-Know information. The annual training includes, at a minimum, a review of material safety data sheets (MSDS) for those materials that are present at the Plant and labeling.
- Personal Protective Equipment (PPE) - All Plant personnel are trained annually on the Anadarko requirements for personal protective equipment (PPE). The training includes, at a minimum, a review of all the types and levels of personal protective equipment and how to select the correct equipment for the job.

## **B. EMERGENCY RESPONSE DRILLS**

1. The Plant will conduct, at least, a tabletop drill annually. Multiple drills during the year may be scheduled at the discretion of the Plant Superintendent or as part of the Emergency Response Center in The Woodlands.
2. The annual drill will exercise this Plan and include, at a minimum, contacting the entities that are identified as being within the 500-ppm ROE and the Local Emergency Response contacts identified on **Appendix G**. The drills will also include briefing of public officials on issues such as evacuation or shelter-in-place plans even though the current ROE will not require evacuations or shelter in place.
3. Drill training will be documented and those records will be maintained at the Plant. The documentation shall include at a minimum the following:
  - a. Description or scope of the drill, including date and time
  - b. Attendees and Participant to the drill
  - c. Summary of activities and responses
  - d. Post drill de-brief and reviews

# APPENDIX A

## WORST CASE SCENARIO

The basis for worst case calculations is 3500 parts per million (ppm) or 0.35 mole percent of hydrogen sulfide in the inlet gas to the San Juan River Gas Plant and a maximum daily (24 hour) processing volume of 35,000 Mscf. The ROE assumes an uncontrolled instantaneous release from the area around the amine contact towers of the referenced volume and concentration. Calculations using the ROE formula pursuant to NMAC 19.15.11 are provided in **Appendix B**.

It should be noted that this rate, though used as worst case, would unlikely be released due to the Plant emergency shut down (ESD) systems that when activated shuts down the Plant. ESD valves on the inlet receivers to the Plant act as secondary control to prevent gas from entering the Plant. In addition, each inlet pipeline (Aneth and Barker) have ESD valves 2 miles from the Plant as well as ESD valves another 6 and 8 miles down respectively.

# APPENDIX B

## RADIUS OF EXPOSURE CALCULATIONS

The formulas for calculating the two ROEs (as specified by the regulations) are as follows:

### 500-ppm RADIUS OF EXPOSURE CALCULATION

$$X = [(0.4546)(\text{hydrogen sulfide conc.})(Q)]^{(0.6258)}$$

Where:

X = Radius of exposure in feet

Hydrogen Sulfide Conc = Decimal equivalent of mole or volume fraction of hydrogen sulfide in the gaseous mixture

Q = Escape rate expressed in cubic feet per day (corrected for standard conditions of 14.73 psi absolute and 60 degrees Fahrenheit)

- a) For existing facilities or operations, the escape rate (Q) is the maximum daily rate of the gaseous mixture produced or handled or the best estimate thereof. For the San Juan River Gas Plant the Company is using for contingency planning purposes an "escape rate" equal to the inlet gas volume of 35,000 MCFD. The inlet gas volume at the Plant is somewhat variable and is continuously metered. The Plant records daily inlet gas volumes and prepares a daily volume report. 35,000 MCFD has been selected as the escape rate since it is the highest volume that the Plant would handle under its current operations and is considered worst case interpretation of the volume of gas.

As to hydrogen sulfide concentration of the inlet gas, daily monitoring data indicates variable concentrations, however 3500 ppm (0.35 mole percent) is a worst case scenario. Thus, the Plant has used a hydrogen sulfide concentration of 3500 ppm for its contingency planning purposes.

Using:

$$Q = 35,000,000$$

$$\text{H}_2\text{S conc} = 3500 \text{ ppm or } 0.35 \text{ mole\%}$$

$$\frac{[(0.4546) * (\text{H}_2\text{S concentration}) * (\text{gas volume } (Q))]^{0.6258}}{[(0.4546) * (3500 * .000001) * (35,000,000)]^{0.6258}}$$

**500-ppm ROE = 933 feet**

**100-ppm RADIUS OF EXPOSURE CALCULATION**

$$\frac{[(1.589) * (\text{H}_2\text{S concentration}) * (\text{gas volume})]^{0.6258}}{[(1.589) * (3500 * .000001) * (35,000,000)]^{0.6258}}$$

**100-ppm ROE = 2,042 feet**

# APPENDIX C

## 100-PPM AND 500-PPM RADIUS OF EXPOSURE MAP

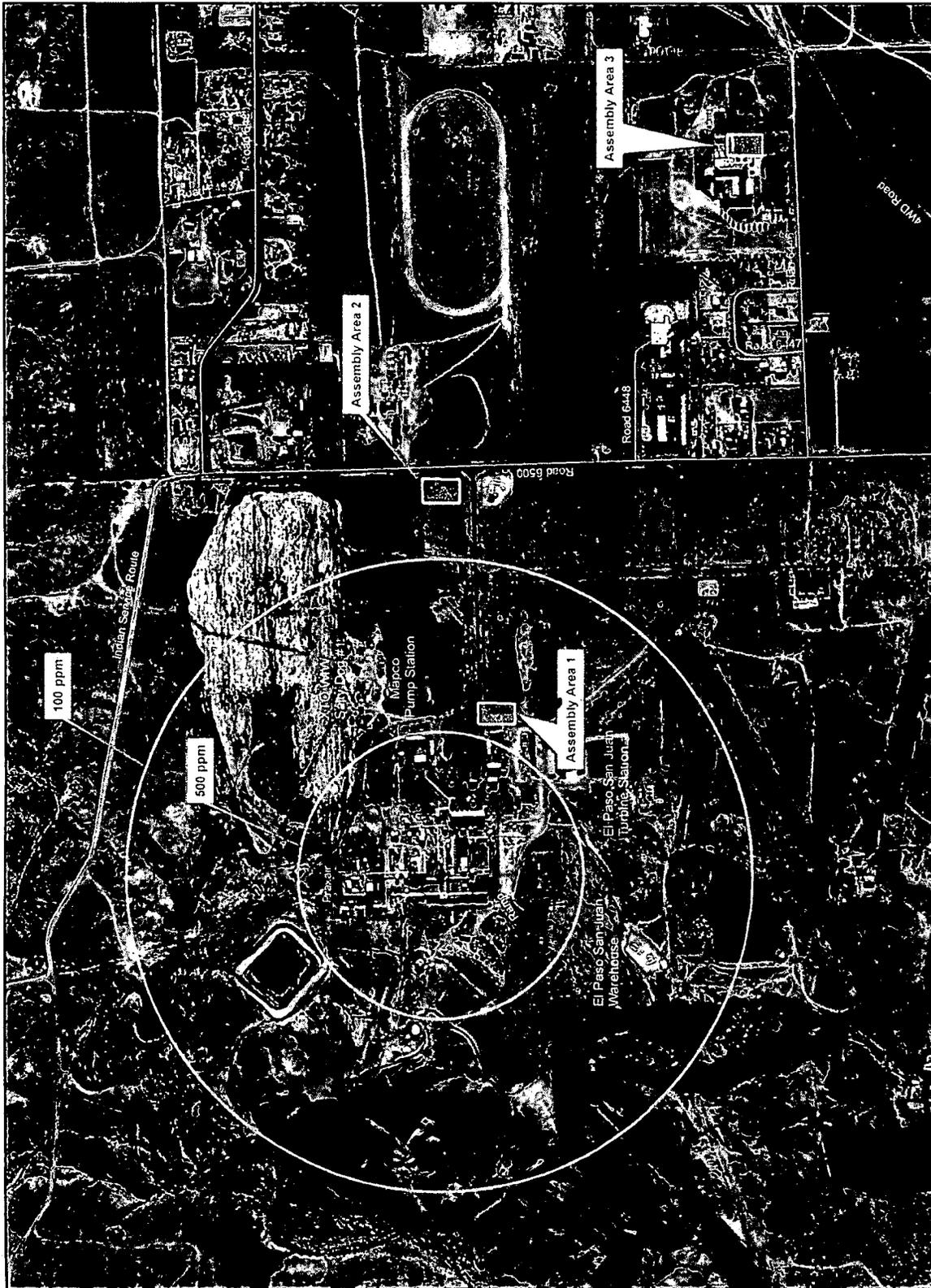


**San Juan River Gas Plant  
Hydrogen Sulfide Contingency Plan  
Radius of Exposure**

**CURRENT OPERATIONS**

- Amine Tower \*
- Radius of Exposure
- 933 ft (500 ppm)
- 2042 ft (100 ppm)
- Assembly Area
- Business

\*Based on 35 M/Mscfd @ 3500 ppm H<sub>2</sub>S



# APPENDIX D

PLANT DIAGRAM WITH  
EVACUATION ROUTES & EMERGENCY  
EQUIPMENT LOCATIONS



# APPENDIX E

## DESCRIPTION OF H<sub>2</sub>S MONITORING & ALARM SYSTEMS

### A. EMERGENCY SHUTDOWN SYSTEM

There are (8) ESD manual stations located at various points in the facility (Appendix D). **The Plant ESD can be activated at any time at the direction of the Plant Superintendent or Incident Commander and is to be activated based on this Plan after 20 ppm H<sub>2</sub>S has been detected in the Plant and efforts to resolve the issue for 15 minutes have failed.**

When anyone of the eight (8) manual stations are activated, the system will be shutdown and the natural gas inlets and outlets will be blocked. The operators are also able to auto close the two (2) main blocks on the incoming gas lines to the Plant. Activating these should allow the Plant to avoid a Level 3 response. Two miles north of the Plant on the Barker Dome line and the Aneth line, there are isolating block valves (manual) that can prevent further gas flow into the Plant pipeline system. Also, further upstream on the Barker and Aneth lines there are additional isolating block valves at 6 miles and 8 miles upstream on their respective lines. These block valves furthest upstream, isolate the entire system from the field gathering lines coming into the Plant.

### B. PLANT ALARMS, VISIBLE BEACONS & WIND INDICATORS

1. Colored beacons, horns, and wind directions indicators are located in various locations throughout the Plant and are indicated on **Appendix D**.
2. The audible signal for an emergency response and Plant evacuation is a repeating intermittent alarm that sounds at 10 ppm H<sub>2</sub>S. The frequency of this intermittent alarm will increase as the concentration of the H<sub>2</sub>S release increases. The alarm will become continuous when the concentration of the H<sub>2</sub>S release is 20 ppm or higher. At the initial sound of this intermittent alarm, the Plant operator will put on a SCBA and all personnel in the Plant complex shall immediately proceed in a safe manner to the Emergency Assembly Areas as prescribed by the Emergency Action Plan on page 19 of this Plan.
3. A flashing red beacon signifies an H<sub>2</sub>S release of 10 ppm and all personnel in the Plant complex shall immediately proceed in a safe manner to the Emergency Assembly Area 1 located east of the main office. If this area is not determined to be safe all will move to Assembly Area 2 which is on road 6500 at the main gate on the east side of the facility. Evacuation routes and Assembly Area 1 are indicated on **Appendix D**.

4. A routine process alarm will cause a horn to sound. This horn is a wavering siren sound that is used to alert the Plant Operator to return to the Control Room. No emergency response or evacuation is required when this siren sounds. Flashing beacons are located throughout the Plant and are utilized to assist the Plant Operator in identifying the location of the Plant alarm or Plant upset. Any beacon colors other than red do not identify an emergency response or evacuation.
5. Wind direction indicators are installed throughout the Plant and at the Plant Superintendent Office Building. At least one wind direction indicator can be seen at any location within the Plant complex, as well as, from any point on the perimeter of the Plant. There are 10 windsocks located in the Plant.

### C. GAS DETECTION EQUIPMENT

1. The Plant uses the Industrial Scientific Corporation 4200 Series Remote H<sub>2</sub>S Sensors. These sensors are a fixed point monitor to detect the presence of hydrogen sulfide in ambient air. The sensors are connected to Allan Bradley/SLC-500 Rockwell Logic Controllers with an output to Moore Micro-Advantage controllers and from here to the operators PLC. The red flashing beacon is activated at 10 ppm. The horn is activated with an intermittent alarm at 10 ppm and changes to a steady alarm at 20 ppm.
2. The fixed hydrogen sulfide monitors are strategically located throughout the Plant to detect an uncontrolled release of hydrogen sulfide. The SRU has 4 sensors labeled A-1 through A-4. The treating plant area has 4 sensors labeled B-1 through B-4. There are two sensors at the east side of the Plant labeled C-1 and C-3. There is one sensor located at the liquid stabilizer skid labeled E-1. This is the center of the process area. The compressor building has eight methane sensors, these shut the compressors down at 50% LEL. The compressor building also is equipped with fire eyes that will also shut the units down. The Plant operators are able to monitor the ppm level of H<sub>2</sub>S of all the Plant sensors on their control/monitor PLC located in the operators building. These sensors are all located on the plot plan on **Appendix D**. These sensors all have to be acknowledged and will not clear themselves. This requires immediate action for any occurrence or malfunction. The Plant sensors are calibrated quarterly.
3. Hand held gas detection monitors are available to plant personnel to check specific areas and equipment prior to initiating maintenance or work on the process or equipment. There are 2 handheld and 9 personal monitors that are used by individuals for special projects and field work. The hand held gas detection devices are BW Technologies 4-gas detectors. The detectors have sensors for oxygen, LEL (explosive hydrocarbon atmospheres), hydrogen sulfide, and carbon dioxide. They indicate the presence H<sub>2</sub>S with a beeping sound at 10 ppm. The beeps change in tone as H<sub>2</sub>S increases to 20 ppm. The personal monitors are set to alarm (beep) at 10 ppm

with the beeps becoming closer together as the H<sub>2</sub>S concentration increases to 20 ppm. Both the hand held and personal monitors have digital read outs of H<sub>2</sub>S ppm concentration.

#### **D. RESPIRATORS**

1. The Plant has 30 minute Self-Contained Breathing Apparatus (SCBA) respirators and 5 minute escape packs strategically located throughout the Plant.
2. The respirator containers are identified in the process area and the locations are identified on **Appendix D**.
3. All Plant personnel with the exception of the Plant Operations Specialist are certified to use the SCBA respirators.

#### **E. FIRE FIGHTING EQUIPMENT**

1. The Plant personnel are trained only for insipient stage fire fighting.
2. The fire extinguishers located in the Plant process areas, compressor buildings, process buildings, and company vehicles are typically a 20# Ansul dry chemical fire extinguisher. **See Appendix D**.
3. The Plant does not have a fire water system, but only a utility water system that is not designed for fire fighting.

# APPENDIX F

## H<sub>2</sub>S CONTINGENCY PLAN FLOW DIAGRAM

### LEVEL 1 RESPONSE

**H<sub>2</sub>S DETECTED GREATER THAN 10 PPM  
&/OR INTERMITTENT ALARM SOUNDS/FLASHING RED BEACONS  
ACTIVATED**

- OPERATORS PUT ON RESPIRATORS (30 minute SCBA) TO ASSESS & RESOLVE PROBLEM  
(Operators are allowed under OSHA to work for up to 8 hours in 10ppm H<sub>2</sub>S environment)
- ALL OTHERS EVACUATE TO ASSEMBLY AREA 1
- NOTIFY PRAXAIR & BHP MINES

**AT ASSEMBLY AREA 1**

- MONITOR H<sub>2</sub>S LEVELS AT ASSEMBLY AREA
- OPERATORS WILL SET UP SECONDARY ENTRY TEAMS W/ 30-MIN SCBA TO TRY TO RE-ENTER AND RESOLVE
- RE-ENTRY WITH SCBA WILL OCCUR IN 15 MINUTE SHIFTS AT THE DIRECTION OF THE IC UNTIL IC DETERMINES PROBLEM HAS BEEN RESOLVED OR ESD IS ACTIVATED)

**CALL 911  
IF INJURY OR  
DEATH  
FOR EMERGENCY  
ASSISTANCE**

**ONCE RESOLVED & MONITORED  
LEVELS IN PLANT ARE LESS THAN 10  
PPM RETURN TO PLANT**

**IF H<sub>2</sub>S LEVELS AT ASSEMBLY AREA 1  
EXCEED 10PPM  
EVACUATE TO ASSEMBLY AREA 2**

**NOTIFY NMOCD WITHIN ONE HOUR  
MAKE AGENCY REPORTS AS  
NECESSARY**

**AT ASSEMBLY AREA 2**

- MONITOR H<sub>2</sub>S LEVELS AT ASSEMBLY AREA
- FOLLOW LEVEL 2 RESPONSE ACTIONS

**NOTIFY LEPC AND OTHER  
PUBLIC OFFICIALS AND  
EMERGENCY SUPPORT SERVICES**

## LEVEL 2 RESPONSE

**H<sub>2</sub>S LEAK DETECTED GREATER THAN 20 PPM &/ CONTINUOUS ALARM SOUNDS/FLASHING RED BEACONS ACTIVATED**

- **OPERATORS PUT ON RESPIRATORS (30-MIN SCBA) TO ASSESS & RESOLVE PROBLEM**

**(Operators have 15 minutes to resolve after which they must evacuate to Assembly Area #2 and begin rotational entry to Plant)**

- **ALL OTHERS EVACUATE TO ASSEMBLY AREA 2**
- **EVACUATE PRAXAIRE**
- **NOTIFY BHP MINES, ALL OTHER BUSINESSES IN THE 100 & 500 PPM ROE.**

### AT ASSEMBLY AREA #2

- **MONITOR H<sub>2</sub>S LEVELS AT ASSEMBLY AREA**
- **IF MONITORED LEVELS EXCEED 10 PPM EVACUATE TO ASSEMBLY AREA 3 (KIRTLAND ELEMENTARY SCHOOL PARKING LOT)**
- **RE-ENTRY WITH SCBA WILL OCCUR IN 15 MINUTE SHIFTS AT THE DIRECTION OF THE IC UNTIL IC DETERMINES PROBLEM HAS BEEN RESOLVED OR ESD IS ACTIVATED)**

**CALL 911  
IF INJURY OR  
DEATH  
FOR EMERGENCY  
ASSISTANCE**

**ONCE RESOLVED & MONITORED  
LEVELS IN PLANT ARE LESS THAN 10  
PPM RETURN TO PLANT**

### IF CONSTANT ALARM SOUNDS FOR 15 MINUTES

- **ACTIVATE PLANT EMERGENCY SHUT DOWN (ESD)**
- **ACTIVATE FULL H<sub>2</sub>S PLAN WITH NOTIFICATIONS & REPORTING (FOLLOW LEVEL 3 RESPONSE)**

**NOTIFY NMOCD WITHIN  
ONE HOUR  
MAKE OTHER AGENCY  
REPORTS AS PER H<sub>2</sub>S  
PLAN**

## LEVEL 3 RESPONSE

### **WORST CASE SCENERIO AND/OR CATASTROPHIC RELEASE FROM FIRE AND/OR EXPLOSION**

- **ALL PERSONNEL EVACUATE TO ASSEMBLY AREA 2 IF MONITORED LEVELS ARE LESS THAN 10 PPM**
- **EVACUATE PRAXAIR**
- **IF MONITORED LEVELS AT ASSEMBLY AREA 2 ARE GREATER THAN 10 PPM; EVACUATE TO ASSEMBLY AREA 3 (ELEMENTARY SCHOOL PARKING LOT)**
- **IMPLEMENT FULL H<sub>2</sub>S PLAN WITH ALL NOTIFICATIONS**
- **NOTIFY LOCAL FIRE, POLICE AND EMERGENCY SERVICES**

ONCE RESOLVED & MONITORED  
LEVELS IN PLANT ARE LESS THAN 10  
PPM RETURN TO PLANT

### **IF CONSTANT ALARM SOUNDS FOR 15 MINUTES**

- **ACTIVATE PLANT EMERGENCY SHUT DOWN (ESD)**
- **RE-ENTRY WITH SCBA WILL OCCUR IN 15 MINUTE SHIFTS AT THE DIRECTION OF THE INCIDENT COMMANDER (IC) UNTIL IC DETERMINES PROBLEM HAS BEEN IDENTIFIED OR REPAIRED**

# APPENDIX G

## EMERGENCY CALL LIST

### SAN JUAN GAS PLANT EMERGENCY CALL LIST

#### ENTITIES WITH IN THE 100- PPM ROE

Name	Address	Contact Person	Phone Number
<b>Riverview Golf Course</b>	583 County Rd 6100 Kirtland, NM 87417		505-598-0140
<b>BHP Mining</b>	16 Miles West of Farmington, NM San Juan County Road RD6800	Dave Hales, Safety Manager	505-598-2311 505-486-1612
<b>El Paso Natural Gas</b>	81 County Road 4900 Bloomfield, NM 87413		800-334-8047 (24 hr)
<b>Mid-America Pipeline Co. (Enterprise)</b>	3621 East Main Farmington, NM 87402		505-599-3276 505-599-3277 800-546-3482 (24 hr)
<b>Praxair</b>	101 County Road 6500 Bloomfield, NM 87417		505-598-0549 800-598-0549 (24 hr)
<b>XTO Energy</b>	2700 Farmington Ave. Farmington, NM 87401		505-324-1090
<b>San Juan College West*</b>	69 County Road 6500 Kirtland, NM 87417		505-598-5897

\*Note: The San Juan College West is not within the 100-ppm ROE but is approximately 468 ft outside the 100-ppm radius of exposure. Due to the near proximity, the San Juan College West will be included in this contingency plan.

#### ENTITIES WITH IN THE 500- PPM ROE

Name	Address	Contact Person	Phone Number
<b>Praxair</b>	101 County Rd 6500 Bloomfield, NM 87417		505-598-0549 800-598-0549 (24 hr)

**A. COMPANY INTERNAL NOTIFICATIONS  
SAN JUAN RIVER PLANT PERSONNEL**

NAME	TITLE	OFFICE No.	CELLULAR No.	HOME No.
Kent McEvers	Plant Superintendent	505-598-5601 ext. 15523	505-860-7208	505-326-4054
Rick Fetch	Plant Foreman	505-598-5601 ext. 15522	505-947-2416	505-324-6441
Arlyn Thorson	Maintenance Foreman	505-598-5601 ext. 15524	505-947-2417	505-326-6718
Bob McClain	Plant Operator	505-598-5601 ext. 15542	505-330-1966	505-325-8715
Brenda Wilson	Sr. Operations Specialist	505-598-5601 ext. 15521		505-325-6525
Andrew Adame	Plant Operator			505-360-7051
Chee Anderson	Plant Operator			505-326-1397
Glen Daniell	Plant Operator		505-860-7483	505-632-9705
Curtis Day	Plant Operator			505-801-4404
Johnny Foster	Plant Operator			505-801-5062
Frank Hale	Plant Operator		505-860-5897	505-598-9091
Bobby James	Plant Operator			505-598-5314
Melvin Jim	Plant Operator			505-368-4733
Charlie Barr	Mechanic		505-324-1100	505-330-2614
Jerry Darnell	Fieldman			505-632-2722
Ted Francis	Fieldman			505-564-2999
Kent Galyon	Fieldman		505-860-1875	970-565-1006
William Golbe	Mechanic		505-215-2517	505-598-9716
Charlie Medders	Mechanic		505-947-7039	505-598-5573
Corwyn Yazzie	Mechanic		505-793-2567	505-327-3286

**B. COMPANY INTERNAL NOTIFICATIONS  
CORPORATE PERSONNEL – THE WOODLANDS, TEXAS**

NAME	TITLE	OFFICE No.	CELLULAR No.	HOME No.
Mario Reyes	Operations Mgr	832-636-3234	713-816-5006	281-360-1084
Mike Ross	General Mgr	832-636-3431	832-381-0923	281-296-0385
Tony Marques	Engineering Mgr	832-636-7368		
Chuck Johnson	Commercial Develop. Mgr	832-636-7119		

David Ponikvar	S&H Mgr	832-636-3414	281-732-7887	281-374-8334
Julie Betik	Env & Reg Anal	832-636-2609	281-793-7705	281-320-2066
Eric Weaver	EHS Analyst	432-684-2808	432-413-2494	432-756-3493
Jerry Adams	EHS Mgr	832-636-8304	281-731-5931	281-363-4693
Mike Gray	EHS Director	832-636-2454	281-415-6964	936-271-9869

### C. COUNTY & LOCAL LAW ENFORCEMENT

AGENCY	DAYTIME / 24 HR. PHONE No.
Law Enforcement Dispatch	911
San Juan County Sheriff	505-334-6622
Farmington Police	505-327-0222
Navajo Tribal Police	505-368-4333
Ute Mountain BIA	303-565-8471
New Mexico Highway Patrol	505-325-7547
New Mexico FBI	505-325-8631
San Juan County LEPC	505-334-1180
BLM Farmington Office	505-599-8900

### D. MEDICAL SERVICES

AGENCY	EMERGENCY SERVICE	PHONE No.
Emergency Dispatch	Fire & Ambulance	911
San Juan County Fire Marshall	Fire Department	505-334-9431
San Juan Regional Medical Center	Hospital	505-325-5011
Emergency Trauma Lifeline Service - Farmington		505-325-5602
Dr. Robert C. Rhein	Doctor	505-327-4867
Dr. Ken Crider	Doctor	505-327-4439
San Juan Air Care Farmington	Air Ambulance	800-452-9990

**E. FEDERAL NOTIFICATIONS**

<b>AGENCY</b>	<b>DAYTIME / 24 HR. PHONE No.</b>
National Response Center	800-424-8802
EPA Region 8	800-227-8917
OSHA	800-321-6742
OSHA Area Office New Mexico	505-827-4230
DOT	800-424-8802
BLM Farmington	505-599-8900

**F. NEW MEXICO STATE NOTIFICATIONS**

<b>AGENCY</b>	<b>DAYTIME / 24 HR. PHONE No.</b>
New Mexico One Call	800-321-2537
New Mexico Oil Conservation Division	505-334-6178
New Mexico Environmental Department	505-476-4300
New Mexico Emergency Response Commission	505-476-9681
New Mexico Public Utilities Commission	505-490-2375
New Mexico State Patrol	505-325-7547

**G. CONTRACTORS**

<b>CONTRACTOR</b>	<b>CONTACT</b>	<b>OFFICE No.</b>	<b>CELLULAR No.</b>
<b>Contractors - General</b>			
IMI Construction		505-325-5005	
Weeminuche Construction	Benton Dean	970-565-7430	

<b>Service Companies Supplies</b>			
Noels Inc		505-327-3375	
ESSO Pipe & Supply		505-325-7568	
Air Gas		505-325-6660	
DXP	Steve Martinez	505-326-3333	
DeWees Tool & Supply		505-326-5491	
<b>Emergency Response &amp; Safety Services</b>			
ChemTrec		800-424-9300	
Hands On Safety Service		505-325-4218	
<b>Electrical Services</b>			
Four Corners Electric		505-325-1459	
B&G Electric		505-325-7511	

#### H. OTHER PRODUCERS

COMPANY	CONTACT	OFFICE No.	CELLULAR No.
Burr Oil & Gas	Deana	505-325-1701	
Conoco/Burlington	Jerry Lodermilk		505-320-0452
	Renaë	505-330-2946	
DJ Simmons Company	John Byrom	505-326-3753	
Elm Ridge Resources	Office	505-334-3476 ext 210	
	Terry Lindeman	972-749-6941	
El Paso Natural Gas		505-632-6000	
	Emergency Number	800-334-8047	
Nacogdoches Oil & Gas	Aaron	936-697-3750	
Resolute Natural Resources	Office	970-564-5200	
	Montezuma Creek	435-651-3682	
	Roger Atcitty		435-444-0001
Rim Southwest Corporation	Thelma Dee	435-651-4391	
XTO Energy Inc.	Office	505-324-1090	

	John Weaver	505-330-3278
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**I. OTHER RESOURCES**

<b>COMPANY</b>	<b>OFFICE No.</b>	<b>Website</b>
National Weather Service Albuquerque, New Mexico	505-243-0702	
Farmington Four Corners Regional Airport – National Weather Service		<a href="http://weather.noaa.gov/weather/current/KF&lt;br/&gt;MN.html">http://weather.noaa.gov/weather/current/KF MN.html</a>
Additional Weather Sites		<a href="http://www.accuweather.com">www.accuweather.com</a> <a href="http://www.wunderground.com">www.wunderground.com</a> <a href="http://www.weather.com">www.weather.com</a>

# APPENDIX H

## H<sub>2</sub>S PLAN DISTRIBUTION LIST

**New Mexico Oil & Gas Conservation Division**

**New Mexico Environment Department**

**New Mexico Department of Public Safety (Farmington Office)**

**New Mexico Department of Public Safety (State Office)**

**Farmington Fire Department**

**San Juan County Fire Department**

**San Juan County Sheriff Department**

**San Juan County Emergency Manager**

**San Juan County LEPC**

**Farmington Police**

**San Juan Regional Medical Center**

**San Juan Plant Office**

**Anadarko Petroleum Corporate Office**

**APPENDIX C - SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN**

**SPILL PREVENTION, CONTROL AND  
COUNTERMEASURE PLAN**

PREPARED FOR:

**ANADARKO PETROLEUM CORPORATION**

San Juan River Area  
99 County Road 6500  
Kirtland, New Mexico 87417

PLAN TYPE:

**§112.9 Requirements for Onshore Production Facilities**

**IF AN EMERGENCY OR SPILL,  
CONTACT**

**San Juan River Area AT 505-598-5601 OR**

**Kent McEvers AT +1 505/598-5601**

**AND REFER TO SECTION A.2. FOR SPILL REPORTING  
AND RESPONSE PROCEDURES**

## **LIST OF FACILITIES COVERED BY THIS PART A**

- Barker Creek Compressor Station
- Four Corners Compressor Station
- Salty Dog #2 Compressor Station
- San Juan River Gas Plant

## **ACTION ITEM SUMMARY**

Throughout this Spill Prevention, Control and Countermeasure (SPCC) Plan (the Plan), items that require specific attention because of inspection, training and recordkeeping requirements, are presented in bold print and underlined. These 'Action Items' are summarized below.

### **PART A – GENERAL PLAN REQUIREMENTS**

- **Section A.1.1. – (At all times)** Maintain a complete copy of the SPCC Plan at the nearest field office.
- **Section A.1.3. – (After change to a Facility)** The SPCC Plan will be revised whenever there are design, construction, operation, or maintenance changes to a Facility. See Log of Plan Review and Amendments.
- **Section A.1.3. – (Every 5 years)** Management must review, evaluate and re-certify the Plan for its adequacy.
- **Section A.1.5. - (At all times)** Inspection procedures, tests and records, signed by the appropriate supervisor or inspector, will be kept with the SPCC Plan for a period of no less than three years.
- **Section A.1.5. – (Annual)** Inspection of SPCC Facilities (e.g. bulk storage containers, oil-filled equipment, oil and oily-water containing process units, and containment structures) will be conducted.
- **Section A.1.6. - (Prior to assignment of responsibilities)** All oil-handling personnel will be trained in discharge prevention and spill response prior to the assignment of job responsibilities.
- **Section A.1.6. – (Annual)** Discharge prevention briefings for all oil-handling personnel will be conducted.
- **Oil Spill Contingency Plan and/or Facility Response Plan will be updated on an as-needed basis**

### **PART B – FACILITY INFORMATION**

- **Section B.1.5.1. - (Annual)** Inspection of aboveground piping will be conducted.
- **Section B.1.8. - (After repair or change)** Field constructed containers must be reevaluated for brittle fracture failure potential.
- **Section B.1.10. - (Each drainage/discharge event)** All discharges of stormwater from secondary containment must be evaluated and recorded.

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LIST OF FACILITIES COVERED BY THIS PART A  
ACTION ITEM SUMMARY  
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LOG OF PLAN REVIEW AND AMENDMENTS – PART A  
FEDERAL REGULATORY REQUIREMENTS / SPCC PLAN CROSS-REFERENCE

### PART A – GENERAL PLAN REQUIREMENTS

#### A.1. GENERAL INFORMATION

- A.1.1. Plan Copy [§112.3(e)]
- A.1.2. Management Approval [§112.7]
  - A.1.2.1. Designated Person Accountable for Oil Spill Prevention at the Facility [112.7(f)(2)]
- A.1.3. Amendment of Plan by Owner or Operator [§112.5]
- A.1.4. Oil Spill Contingency Plan [§112.7(d)]
- A.1.5. Inspections, Tests And Records [§112.7(e), §112.9(b)(2), (c)(3), (d)(1) and (2)]
- A.1.6. Personnel Training [§112.7(f)]
- A.1.7. Security [§112.7(g)]
- A.1.8. Conformance with State Requirements [§112.7(j)]

#### A.2. SPILL REPORTING AND RESPONSE [§112.7(a)]

- A.2.1. Emergency Contact Information [§112.7(a)(3)(vi)]
- A.2.2. Spill Reporting Requirements and Amendment of Plan by Regional Administrator [§112.4(a), §112.7(a)(4) and §112.7(a)(5)]
  - A.2.2.1. Spill Reporting and Response Requirements
- A.2.3. Emergency Response Procedures [§112.7(a)(3)(iv) and (a)(5)]
  - A.2.3.1. Spill Discovery and Response
  - A.2.3.2. Spill Response Resources
- A.2.4. Recovered Materials Management [§112.7(a)(3)(v)]

#### A.3. ONSHORE WORKOVER FACILITIES [§112.10]

- A.3.1. Mobile Equipment and Containment [§112.10 (b) and (c)]
- A.3.2. Blowout Prevention [§112.10 (d)]

#### A.4. SUBSTANTIAL HARM DETERMINATION [§112.20]

#### A.5. FACILITY RESPONSE PLAN [§112.20]

## FIGURES

- Figure A-1 Emergency Response Flowchart and Responsibilities
- Figure A-2 Substantial Harm Criteria Checklist

## TABLE OF CONTENTS (Cont'd)

### APPENDICES

#### Appendix A Forms

Spill Report Form  
Regional Administrator Reporting Form  
Annual SPCC Inspection Checklist  
SPCC Drainage Inspection and Discharge Log

#### PART B – FACILITY INFORMATION

##### B.1. FACILITY NAME AND LOCATION [§112.7(a)(3)]

- B.1.1. Designated Person at Facility [§112.7(f)(2)]
- B.1.2. Professional Engineer Certification [§112.3(d)]

#### LOG OF PLAN REVIEW AND AMENDMENTS – PART B

- B.1.3. Facility Conformance with SPCC Rule [§112.7(a)(1) and (a)(2)]
- B.1.4. Facility Description [§112.7(a)(3)]
- B.1.5. Facility Transfer Operations [§112.9(d)]
  - B.1.5.1. Aboveground Piping and Appurtenance Protection and Examination [§112.9(d)(1)]
  - B.1.5.2. Produced Water Disposal Facilities [§112.9(d)(2)]
  - B.1.5.3. Flowline Maintenance Program [§112.9(d)(3)]
  - B.1.5.4. Loading/Unloading Racks [§112.7(h)]
- B.1.6. Facility Storage and Bulk Storage Containers [§112.7(a)(3)(i), 112.7(i) and 112.9(c)]
  - B.1.6.1. Tank Compatibility with Contents [§112.9(c)(1)]
  - B.1.6.2. Engineer or Update Each Container [§112.9(c)(4)]
- B.1.7. Fault Analysis [§112.7(b)]
- B.1.8. Brittle Fracture Evaluation [§112.7(i)]
- B.1.9. Secondary Containment [§112.7(c); §112.7(k) and §112.9(c)(2)]
- B.1.10. Oil Production Facility Drainage [§112.9(b)(1) and (b)(2)]

Table B-1 Site Specific Data and Containment Calculations

### FIGURES

Figure B-1 Facility Diagram  
Figure B-2 Facility Map (optional)

## LOG OF PLAN REVIEW AND AMENDMENTS – PART A

### NON-TECHNICAL AMENDMENTS

- Non-technical amendments are not certified by a Professional Engineer.
- Examples of changes include, but are not limited to, phone numbers, name changes, or any non-technical text change(s).

### TECHNICAL AMENDMENTS

- Technical amendments are certified by a Professional Engineer (§112.5(c)).
- Examples of changes include, but are not limited to, commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or addition/deletion of standard operation or maintenance procedures related to discharge prevention measures. It is the responsibility of the field to determine, and confirm with the regulatory authority as necessary, what constitutes a technical amendment. The preamble of the rule states that an amendment is required only "when there is a change that materially affects the facility's potential to discharge oil" (67 FR 47091).
- An amendment made under this section will be prepared within six (6) months of the change and implemented as soon as possible but not later than six (6) months following preparation of the amendment.
- Technical Amendments affecting various pages within the Plan will require P.E. certification of the Plan and will be documented on the log form below.

### MANAGEMENT REVIEW

- Management will review this SPCC Plan at least every five (5) years and document the review on the form below (§112.5(b)).
- By signature below, signor confirms that management has completed a review and evaluation of this SPCC Plan.

Review/ Amend Date	Signature* (Specify)	Amend Plan (will/will not)	Description of Review/Amendment	Affected Page(s)	P.E. Certification (Y/N)

\*Typically signed by Manager, Professional Engineer or Plan Reviewer

Area Name: San Juan River Area

## FEDERAL REGULATORY APPLICABILITY / SPCC PLAN CROSS-REFERENCE

Citation	Description	Heading (Page)	
		Part A	Part B
Subpart A	Applicability, Definitions, and General Requirements for All Facilities and All Types of Oil	(See Below)	
§112.3(d)	Professional Engineer Certification		B.1.2.
§112.3(e)	Plan Copy	A.1.1.	
§112.4	Amendment of SPCC Plan by Regional Administrator	A.2.2.	
§112.5	Amendment of SPCC Plan by Owners or Operators	A.1.3., (vi)	(B-2)
§112.7	General requirements for SPCC Plans for all facilities and all oil types	A.1., (vii)	
§112.7(a)	General requirements: discussion of facility's conformance with rule requirements; deviations from Plan requirements; facility characteristics that must be described in the Plan; spill reporting information in the Plan; emergency procedures	A.2., A.2.1., A.2.2., A.2.3., A.2.4.	B.1., B.1.3., B.1.4., B.1.6.
§112.7(b)	Fault analysis		B.1.7.
§112.7(c)	Secondary containment		B.1.9.
§112.7(d)	Contingency planning	A.1.2., A.1.4.	
§112.7(e)	Inspections, tests, and records	A.1.5.	
§112.7(f)	Employee training and discharge prevention procedures	A.1.6.	B.1.1.
§112.7(g)	Security (excluding oil production facilities)	A.1.7.	
§112.7(h)	Loading/unloading (excluding offshore facilities)		B.1.5.4.
§112.7(i)	Brittle fracture evaluation requirements		B.1.6., B.1.8.
§112.7(j)	Conformance with State requirements	A.1.8.	
§112.7(k)	Qualified Oil-filled Operational Equipment		B.1.9.
Subpart B	Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)	(See Below)	
§112.8	Requirements for onshore facilities (excluding production facilities)	NA	NA
§112.9	Requirements for onshore production facilities	(See Below)	
§112.9(a)	General and specific requirements	(See Below)	
§112.9(b)	Oil production facility drainage	A.1.5.	B.1.10.
§112.9(c)	Oil production facility bulk storage containers	A.1.5.	B.1.6., B.1.9.
§112.9(d)	Facility transfer operations, oil production facility	A.1.5.	B.1.5.
§112.10	Requirements for onshore oil drilling and workover facilities	A.3.	NA
§112.11	Requirements for offshore oil drilling, production, or workover facilities	NA	NA
Subpart C	Requirements for Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils, Including Oils from Seeds, Nuts, Fruits, and Kernels	(See Below)	
§112.12	Requirements for onshore facilities (excluding production facilities)	NA	NA
§112.13	Requirements for onshore oil production facilities	NA	NA
§112.14	Requirements for onshore oil drilling and workover facilities	NA	NA
§112.15	Requirements for offshore oil drilling, production, or workover facilities	NA	NA
Subpart D	Response Requirements	(See Below)	
§112.20	Facility response plans	A.4., A.5.	
§112.21	Facility response training and drills/exercises	NA	NA

# SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN

## ANADARKO PETROLEUM CORPORATION San Juan River Area PART A – GENERAL PLAN REQUIREMENTS

### A.1. GENERAL INFORMATION

The regulations requiring preparation of SPCC Plans were revised by EPA on July 17, 2002 and December 26, 2006. The SPCC regulations are intended to prevent the discharge of oil into or upon the navigable waters of the United States. The regulations, which are codified in 40 CFR 112 (each relevant regulatory citation is identified by brackets), require that facilities that have the potential to impact navigable waters and with aboveground oil storage capacity of 1,320 gallons or more, exclusive of exempt containers, prepare and implement an SPCC Plan.

This Plan is presented in two parts: (1) a Part A which contains Area-specific information that is associated with all of the Facilities within that Area and (2) a Part B for each Facility in the Area that contains the SPCC information specific to that Facility. Thus, Part A in its entirety is fully incorporated into each Part B and each Part B relies on and incorporates the information contained in Part A. In accordance with 40 CFR 112, a Cross-Reference Table is included in Part A of this Plan and indicates which provisions are located in the Part A and/or Part B. The Table of Contents for this Plan also serves as a cross-reference.

#### A.1.1. Plan Copy [§112.3(e)]

A complete copy of the SPCC Plan will be maintained either at the facility, if normally attended at least four hours per day, or at the nearest manned office and will be available for onsite review during normal working hours.

#### A.1.2. Management Approval [§112.7(d)]

I hereby certify that this document and all attachments have full management approval and will be fully implemented under my direction or supervision. Based on my inquiry of the person or persons who manage the Facilities, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Should a discharge occur, Management is committed to provide the necessary manpower, equipment and resources required to expeditiously control and remove any harmful quantity of oil discharged.

Name: Mario Reyes

Signature: \_\_\_\_\_

Title: Operations Mgr

Date: \_\_\_\_\_

**A.1.2.1. Designated Person Accountable for Oil Spill Prevention at the Facility [112.7(f)(2)]**

The following Designated Person is accountable for discharge prevention and reports to the management personnel listed above.

Name: Kent McEvers

Title: Area Supt

**A.1.3. Amendment of Plan by Owner or Operator [§112.5]**

**The SPCC Plan will be revised whenever there is a change to facility design, construction, operation, or maintenance that materially affects the Facility's potential for discharge** as described in 40 CFR 112.1(b) and/or as described in the Log of Plan Review and Amendments of this Plan. As required by the regulations, the Plan will be revised within six (6) months of such facility change.

All amendments will be properly authorized by Facility management and will be implemented as soon as possible, but not later than six (6) months following the preparation of the amendment. Technical amendments will be certified by a Professional Engineer as required by 40 CFR 112.5(c) and kept as an attachment to this plan. The completion of the Plan reviews will be documented on Log of Plan Review and Amendments attached to the Plan.

**Facility management will review and evaluate the entire Plan for its adequacy at least once every five (5) years.** At the conclusion of this review, management must affirmatively document the review by completing the Log of Plan Review and Amendments.

If as a result of this review and evaluation, the Plan requires amendment, it must be amended within six (6) months of the completion of the review to include more effective prevention and control technology, if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge as described in 40 CFR 112.1(b).

**A.1.4. Oil Spill Contingency Plan [§112.7(d)]**

The operator has determined that for its bulk storage containers and most process vessels, the use of containment and/or diversionary structures to prevent discharged oil from reaching navigable waters is practical and effective at the facilities covered under this Part A. The operator has implemented an Oil Spill Contingency Plan for those facilities that have wellheads, oil-filled operating equipment, truck loading areas, process vessels, flowlines and gathering lines not equipped with secondary containment, or where secondary containment is insufficient. The Oil Spill Contingency Plan serves as a written commitment of manpower and resources as discussed in each facility's SPCC Part B, Section B.1.9. The facility is visited on a frequent basis and any spills or accidental releases of oil are properly cleaned up.

#### **A.1.5. Inspections, Tests And Records [§112.7(e), §112.9(b)(2), (c)(3), (d)(1) and (2)]**

Inspection procedures and a record of the inspections and tests will be kept with the Plan for a period of three years. If during any inspection, equipment or a containment system is found to be malfunctioning, resulting in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts, the tank or structure will be removed from service and appropriate repairs completed.

A documented visual inspection for every bulk storage container system, oil and water containing process unit, and containment structure will be completed annually. Tank, heater treater, separator and other container inspections will seek out evidence of wear, defect, and releases in the oil and water containing units and their support system. Inspections of containment areas will seek out general damage, breach of the floor, breach of the walls and releases. Defects discovered in the course of the inspections will be repaired as soon as practicable. See Appendix A for sample Annual Inspection forms.

#### **A.1.6. Personnel Training [§112.7(f)]**

Appropriate oil-handling personnel will be trained in discharge prevention and spill response prior to the assignment of job responsibilities. Training will be completed under the charge of the Designated Person, as identified in Section A.1.2.1 of this Plan, (Designated Person) or a qualified, designated representative. Training may be done in conjunction with other materials handling training. At a minimum the training will include:

- Operation and maintenance of equipment to prevent discharges;
- Discharge emergency protocols;
- Applicable pollution control laws, rules, and regulations;
- General Facility operations; and
- The contents of the SPCC Plan.

A discharge prevention briefing for appropriate oil-handling personnel will be scheduled at least annually (this may be done in conjunction with other required annual training) and will be documented in the Area training logs. At a minimum, annual briefings will include:

- The contents of the SPCC Plan;
- Descriptions of known discharges or failures and their corrective actions;
- Malfunctioning components; and
- Recently developed precautionary measures.

#### **A.1.7. Security [§112.7(g)]**

The facility is an oil production facility and therefore, this provision is not applicable.

### **A.1.8. Conformance with State Requirements [§112.7(i)]**

This SPCC Plan conforms to all State rules, regulations, and guidelines. Appropriate state reporting guidelines are provided in the Oil Spill Contingency Plan.

## **A.2. SPILL REPORTING AND RESPONSE [§112.7(a)]**

Pursuant to Section 112.2, the term 'discharge' means 'spilling, leaking, pumping, pouring, emitting emptying or dumping of oil'. For the purpose of this Plan the terms discharge, spill and release shall be synonymous. Additional information with regard to spill reporting and response can be found in the Oil Spill Contingency Plan.

### **A.2.1. Emergency Contact Information [§112.7(a)(3)(vi)]**

The emergency contact lists for responding to spills are provided in the Oil Spill Contingency Plan.

### **A.2.2. Spill Reporting Requirements and Amendment of Plan by Regional Administrator [§112.4(a), §112.7(a)(4) and 112.7(a)(5)]**

The requirements for spill notification and reporting to local, state, and/or federal officials depend upon the nature and extent of the spill. Notification of and reporting to federal, state and local agencies may be required as referenced in the Oil Spill Contingency Plan. A copy of the spill report form is provided in Appendix A and should be used to assist in meeting the reporting requirements identified below. Non-reportable spill events must be addressed immediately by containing, removing and disposing of the released material according to applicable regulations.

Also note that there are special reporting requirements for facilities that experience reportable spills to navigable waters as referenced in 40 CFR 112.1(b) of 1,000 gallons (238 bbls) or more or that experience two (2) reportable spills as reference in 40 CFR 112.1(b) of greater than 42 gallons (1 bbls) each within a 12-month period. Those facilities meeting one or both of these criteria are required to submit a report to the Regional Administrator within 60 days of the spill event (see Regional Administrator Reporting Form in Appendix A).

After review of the information submitted, or after an on-site review of the Plan, the Regional Administrator may require an amendment to the Plan if the Regional Administrator finds that the Plan does not meet the requirements of 40 CFR 112 or if an amendment is necessary to prevent and contain discharges at the Facility.

#### **A.2.2.1. Spill Reporting and Response Requirements**

Following discovery of a spill, on-scene personnel should notify their Supervisor and/or the Designated Person as soon as practicable. If the situation allows, on-scene personnel should also attempt to control or eliminate the source of the spill.

A preliminary spill assessment is to be conducted by on-scene personnel to provide the Designated

Person with the information necessary to initiate the appropriate response. A Spill Report Form (see Appendix A) should be completed, provided to the Designated Person and include the following information:

- Date and time of incident;
- Type and estimated total quantity of material released;
- Source and cause of the release;
- Description of all affected media and assessment of environmental conditions such as precipitation, wind speed and direction, and temperature;
- Estimated spill destination and local topography;
- Assessment of immediate danger to human life or health or to the environment, including outside the Facility, and extent of damages or injuries, if any and
- Actions being used to stop, remove and mitigate the effects of the release.

### **A.2.3. Emergency Response Procedures [§112.7(a)(3)(iv) and (a)(5)]**

If a spill occurs, Facility personnel trained in accordance with the training requirements of this Plan, or their Contractors listed in the Oil Spill Contingency Plan, will respond as outlined in Figure A-1 Emergency Response Flowchart and Responsibilities.

#### **A.2.3.1. Spill Discovery and Response**

In the event of a release, the observer will move to a place of safety in relation to the spill. Only if trained to do so and if it is safe, the observer will take reasonable efforts to stop or control the source of the spill. The observer will immediately report the spill to their Supervisor and/or Designated Person. If necessary, the Designated Person, or his designee, will notify the On-Scene Commander to assess the situation and initiate response actions. The Designated Person, or his designee, will then determine if the spill is reportable, notify the appropriate Agencies, and provide the information listed on the Spill Reporting Form in Appendix A.

The spill will be isolated and cleaned up as directed by the Designated Person and/or On-Scene Commander. In general, the procedures to be used are as follows:

- Identify the material spilled and its source;
- Remove all sources of ignition;
- Take appropriate measures to stop the flow of material;
- Quickly determine the size and flow direction of the spill;
- If possible, contain the spill with equipment and materials located within the area;
- Determine if the spill can be handled by Facility personnel or whether an emergency clean-up contractor must become involved;

- Recover spilled material and dispose of properly; and
- Complete the Spill Reporting Form (Appendix A) as directed by the Designated Person and/or On-Scene Commander.

#### **A.2.3.2. Spill Response Resources**

The necessary response personnel, materials, contractors, and equipment are listed in the Oil Spill Contingency Plan and will be mobilized as needed to respond to each spill. Resources are as follows:

- Emergency Response Personnel - Manage and/or conduct emergency response actions. All emergency response personnel have full authority to implement response actions.
- Emergency Response Contractors - Emergency response personnel utilize emergency response contractors to supplement internal resources.
- Emergency Response Authorities - Emergency response personnel have access to a number of external emergency response authorities who can provide assistance during spill response events.
- Spill Response Equipment and Materials - Various spill response materials are maintained in the area of the Facility. These materials are stored either at the facility or supplied by contractors and are available for use by Company Emergency Response Personnel and Emergency Response Contractors.

#### **A.2.4. Recovered Materials Management [§112.7(a)(3)(v)]**

Following an emergency response incident, the On-Scene Commander and any involved contractors will ensure that any material recovered is properly characterized and managed in accordance with applicable regulations. Additionally, following the completion of spill response and cleanup activities, emergency equipment and supplies will be decontaminated and returned to storage or replaced, as appropriate.

### **A.3. ONSHORE WORKOVER FACILITIES [§112.10]**

This section applies to company owned workover rigs. Contracted workover rigs and associated rental equipment are not covered in this SPCC Plan. Contracted workover rigs and associated rental equipment will comply with SPCC regulations as required by the Master Service Agreement.

#### **A.3.1. Mobile Equipment and Containment [§112.10 (b) and (c)]**

Mobile workover equipment will be positioned as to prevent a discharge as described in 112.10(b). Catchment basins or diversion structures to intercept and contain discharges of fuel, crude oil, or oil based drilling fluid will be provided as appropriate. Where catchment basins or diversion structures are impracticable, the Oil Spill Contingency Plan will be utilized to prevent or minimize impacts.

**A.3.2. Blowout Prevention [§112.10 (d)]**

Blowout prevention (BOP) assemblies and well control systems capable of controlling the expected wellhead pressure will be installed before drilling below any casing point. When working over a well, a BOP and well control system will be used.

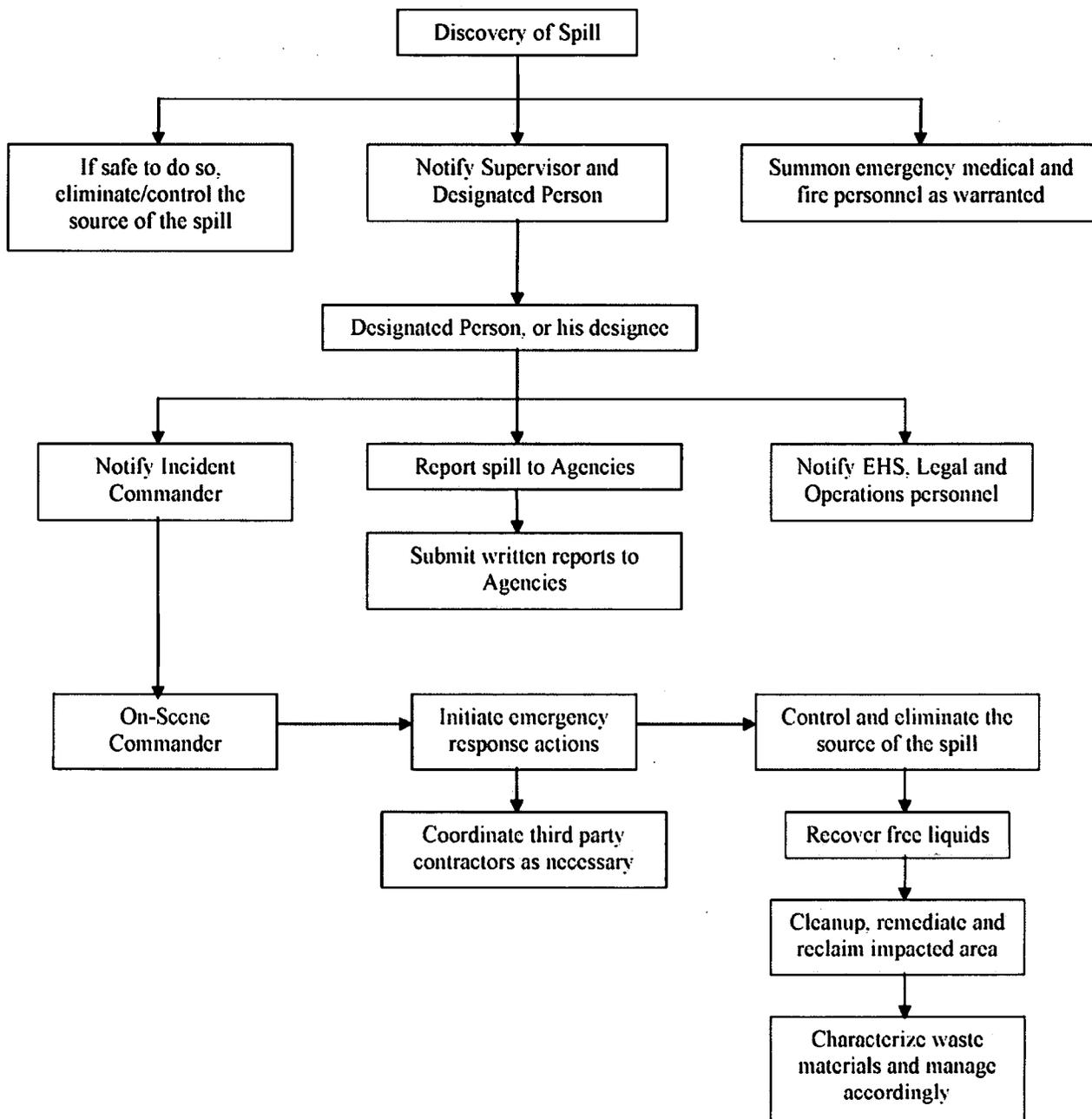
**A.4. SUBSTANTIAL HARM DETERMINATION [§112.20]**

A Substantial Harm determination has been conducted for all SPCC Facilities covered by this Part A. A certified Substantial Harm Checklist has been signed and attached as Figure A-2.

**A.5. FACILITY RESPONSE PLAN [§112.20]**

In accordance with 40 CFR 112.20, it has been determined that a Facility Response Plan is not required for any SPCC Facility covered by this Part A. To support this determination, a certified Substantial Harm Checklist has been signed and attached as Figure A-2.

**FIGURE A-1  
EMERGENCY RESPONSE FLOWCHART AND RESPONSIBILITIES**



## FIGURE A-2 SUBSTANTIAL HARM CRITERIA CHECKLIST [§112.20]

AREA NAME: San Juan River Area

AREA ADDRESS 99 County Road 6500  
Kirtland, New Mexico 87417

1. Do any of the facilities covered in this plan transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes \_\_\_\_\_ No X

2. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

Yes \_\_\_\_\_ No X

3. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula<sup>1</sup>) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Environments" (§10, Appendix E, 40 CFR 112 for availability) and the applicable Area Contingency Plan.

Yes \_\_\_\_\_ No X

4. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula<sup>1</sup>) such that a discharge from the facility would shut down a public drinking water intake<sup>2</sup>?

Yes \_\_\_\_\_ No X

5. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes \_\_\_\_\_ No X

### CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.

\_\_\_\_\_  
Name (please type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

From 40 CFR 112 Appendix C, Attachment C-II

<sup>1</sup> If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

<sup>2</sup> For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

**APPENDIX A**

**FORMS**

Spill Report Form  
Regional Administrator Reporting Form  
Annual SPCC Inspection Checklist  
SPCC Drainage Inspection and Discharge Log

**REGIONAL ADMINISTRATOR REPORTING FORM [§112.4(a)]**

When reporting a discharge under 40 CFR 112.4(a), the information listed in the Regional Administrator Reporting Form must be submitted to the Regional Administrator within 60 days. (Check as appropriate)

- This Facility has experienced a reportable spill as referenced in 40 CFR Part 112.1(b) of 1,000 gallons or more
- This Facility has experienced two (2) reportable spills as referenced in 40 CFR Part 112.1(b) of greater than 42 gallons each within a 12-month period.

FACILITY NAME AND LOCATION: \_\_\_\_\_  
\_\_\_\_\_

CONTACT PERSON (NAME, ADDRESS/PHONE NUMBER): \_\_\_\_\_  
\_\_\_\_\_

MAXIMUM STORAGE/HANDLING CAPACITY: \_\_\_\_\_

NORMAL DAILY THROUGHPUT: \_\_\_\_\_

CORRECTIVE ACTION/COUNTERMEASURES: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FACILITY DESCRIPTION (Include maps and facility diagrams as needed): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CAUSE OF DISCHARGE/FAILURE ANALYSIS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PREVENTIVE MEASURES TAKEN: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Name (please type or print)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN

## WESTERN GAS RESOURCES INC San Juan River Gas Plant PART B – FACILITY INFORMATION

### B.1. FACILITY NAME AND LOCATION [§112.7(a)(3)]

San Juan River Gas Plant

WINS No: N/A

Section: 1, Township: 29, Range: 15

County/Parish: San Juan State: New Mexico

Latitude: 36.758966 Longitude: 108.367494

#### Directions to the Facility:

From the intersection of State Highway 64 and County Road 6500 go north on County Road 6500 for 1 mile to plant entrance road. Turn west on plant entrance road, go approximately 0.3 miles to the plant main office.

#### B.1.1. Designated Person at Facility [§112.7(f)(2)]

Name: Kent McEvers

Title: Area Supt

#### B.1.2. Professional Engineer Certification [§112.3(d)]

By means of this Professional Engineer Certification, I hereby attest to the following:

- I am familiar with the requirements of Title 40, Part 112 of the Code of Federal Regulations (40 CFR 112);
- That I, or my agent, has visited and examined the above referenced Facility;
- That this Spill Prevention, Control and Countermeasure Plan, Parts A and B, (the Plan) has been prepared in accordance with good engineering practice, including applicable industry standards, and with the requirements of 40 CFR 112;
- That procedures for inspections and testing have been established; and
- This Plan is adequate for the Facility.

Date: \_\_\_\_\_

Name: Roger Martin

Signature: \_\_\_\_\_

Company: Consulting Engineer

Registration No.: 62740

State: Texas

(Seal)

The Facility recognizes that, in accordance with 40 CFR 112.3(d)(2), engineer certification in no way relieves the Facility of the responsibility to prepare and fully implement the Plan.

## LOG OF PLAN REVIEW AND AMENDMENTS – PART B

### NON-TECHNICAL AMENDMENTS

- Non-technical amendments are not certified by a Professional Engineer.
- Examples of changes include, but are not limited to, phone numbers, name changes, or any non-technical text change(s).

### TECHNICAL AMENDMENTS

- Technical amendments are certified by a Professional Engineer (§112.5(c)).
- Examples of changes include; but are not limited to, commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or addition/deletion of standard operation or maintenance procedures related to discharge prevention measures. It is the responsibility of the field to determine, and confirm with the regulatory authority as necessary, what constitutes a technical amendment. The preamble of the rule states that an amendment is required only "when there is a change that materially affects the facility's potential to discharge oil" (67 FR 47091).
- An amendment made under this section will be prepared within six (6) months of the change and implemented as soon as possible but not later than six (6) months following preparation of the amendment.
- Technical Amendments affecting various pages within the Plan will require P.E. certification of the Plan and will be documented on the log form below.

### MANAGEMENT REVIEW

- Management will review this SPCC Plan at least every five (5) years and document the review on the form below (§112.5(b)).
- By signature below, signor confirms that management has completed a review and evaluation of this SPCC Plan.

Review/ Amend Date	Signature* (Specify)	Amend Plan (will/will not)	Description of Review/Amendment	Affected Page(s)	P.E. Certification (Y/N)

\*Typically signed by Manager, Professional Engineer or Plan Reviewer

Facility Name: San Juan River Gas Plant

### **B.1.3. Facility Conformance with SPCC Rule [§112.7(a)(1) and (a)(2)]**

This Plan is presented in two parts: (1) a Part A which contains Area-specific information that is associated with all of the Facilities within that Area and (2) a Part B for each Facility in the Area that contains the SPCC information specific to that Facility. Thus, Part A in its entirety is fully incorporated into each Part B and each Part B relies on and incorporates the information contained in Part A. In accordance with 40 CFR 112.7, a Cross-Reference Table is included in Part A of this Plan and indicates which provisions are located in the Part A and/or Part B.

As an onshore production facility, the following sections of SPCC regulations apply to this Facility: Sections 112.1 through 112.7 and 112.9. Sections 112.7(g), 112.8 and 112.11 do not apply because they specifically exempt production facilities or apply to offshore facilities. Section 112.10 is only applicable to those Facilities where the company is the owner and/or operator of an onshore oil drilling and workover facility. Sections 112.12 through 112.15 are not applicable because the Facility does not store, use or process animal fats and oils and greases. Sections 112.20 and 112.21 do not apply because this facility is not required to maintain a Facility Response Plan.

The Facility is in conformance with all applicable requirements specified in 40 CFR 112.7 and 112.9 unless noted in Table B-1.

### **B.1.4. Facility Description [§112.7(a)(3)]**

The San Jaun Gas Plant is a natural gas treating and processing plant. Specific equipment includes a cryogenic processing skid, a liquid stabilizer, compressors, an amine treating unit, a sulfur recovery unit and a dehydration unit. Produced water and condensate storage tanks are located on the northwest portion of the property. Natural gas liquid product tanks are located on the east side of the property.

### **B.1.5. Facility Transfer Operations [§112.9(d)]**

#### **B.1.5.1. Aboveground Piping and Appurtenance Protection and Examination [§112.9(d)(1)]**

The Facility's aboveground piping is inspected annually for wear, failure and leakage. During the course of inspection, valves, joints and other connections will be assessed by the inspector, as well as external pipe supports. The Annual Inspection Checklist included in Part A, Appendix A will be utilized to guide and document the inspections. Completed checklist forms will be maintained with the Plan.

#### **B.1.5.2. Produced Water Disposal Facilities [§112.9(d)(2)]**

Applicable produced water disposal facilities will be inspected annually and after any event that could result in a system upset. These inspections will be completed using the Annual Inspection form in Appendix A.

#### **B.1.5.3. Flowline/Intra-Facility Gathering Line Maintenance [§112.9(d)(4)]**

The facility has a maintenance program for flowlines and intra-facility gathering lines.

#### **B.1.5.4. Loading/Unloading Racks [§112.7(h)]**

This Facility is not equipped with loading/unloading racks; therefore this section is not applicable.

### **B.1.6. Facility Storage and Bulk Storage Containers [§112.7(a)(3)(i), §112.7(i) and §112.9(c)]**

The Facility is equipped with the petroleum product containers listed in Table B-1.

#### **B.1.6.1. Tank Compatibility with Contents [§112.9(c)(1)]**

All containers are constructed in accordance with industry standards and are compatible with the material stored within and the conditions of storage. See Table B-1 for a listing of each container type.

#### **B.1.6.2. Engineer or Update Each Container [§112.9(c)(4)]**

'Good engineering practice' for tank batteries and other production facilities includes four elements: (1) providing adequate tank capacity to prevent overfilling, (2) using overflow equalizing lines, (3) providing vacuum protection to prevent collapse and (4) using high level sensors with a computerized control system. In accordance with 112.9(c)(4), every production facility must be equipped with at least one of four 'good engineering practice' elements. The Facility employs at least one of the above 'good engineering practices' which is identified on the Annual Inspection form.

### **B.1.7. Fault Analysis [§112.7(b)]**

Where there exists a reasonable potential for equipment failure, the Plan must include a prediction of the direction, rate of flow and total quantity of oil which could be discharged from each type of failure. For this Facility, potential discharges of oil include container and/or pipe failure and spills. Potential spill sources (equipment), total quantity of oil (capacity), rate of flow (rate) and prediction of the flow path (flow direction) are summarized in Table B-1.

### **B.1.8. Brittle Fracture Evaluation [§112.7(i)]**

**Field constructed containers which undergo repair or change of service that might affect the risk of a discharge due to brittle fracture or other catastrophe must be evaluated to confirm vulnerability to brittle fracture failure.** According to EPA SPCC Guidance for Regional Inspectors, Version 1.0 and API 653, "Tank Inspection, Repair, Alteration and Reconstruction", there is no brittle fracture concern for field-constructed containers with a maximum shell thickness of 0.5 inch or less. All field-constructed containers at this facility (identified in Table B-1) have a shell thickness of 0.5 inch or less, therefore brittle fracture evaluation is not applicable.

### **B.1.9. Secondary Containment [§112.7(c) and (d), §112.7(k), and §112.9(c)(2), (c)(5) and (d)(3)]**

All dikes, berms, catchment basins, retention ponds, drip pans and other secondary containment devices are constructed of material (i.e. metal, compacted earth, concrete, plastic, fiberglass) that is sufficiently impervious to contain oil. Secondary containment is considered practicable for the Facility with the exception of the following:

- Some flow-through process vessels (i.e., separators, heater treaters, line heaters, scrubbers) may not be provided with a means of secondary containment due to the small oil capacity of some vessels and their distance to waters of the U.S., the ineffectiveness of berms for a high pressure vessel which, in the most likely release scenario, would tend to spray a small quantity of mist possibly beyond the berm walls, and safety hazards (oil collecting around a fired vessel). Furthermore, these process vessels are generally located at facilities that are visited on a regular basis, therefore increasing the likelihood of spill discovery and response while the spill is still on location.
- Some small, shop-built, elevated storage tanks may not be provided with containment for the entire capacity of the tank plus sufficient freeboard for precipitation due to limited space and access problems. For these tanks, periodic integrity testing will be conducted. This integrity testing will consist of external visual inspections for early signs of deterioration and leakage. Visual inspections plus elevation of the tanks decreases the potential for corrosion. Any tanks found to be leaking will be repaired or replaced.
- Loading/unloading areas and other undiked areas within the facility may not be provided with secondary containment due to limited space and/or safety hazards. Also, all oil and produced water transfer operations are manned, which minimizes the chance of any offsite impact.
- Secondary containment for wellheads and associated piping is impracticable due to limited space and access problems for trucks and well work equipment.

Flowlines and intra-facility gathering lines typically do not have secondary containment. Additionally, some oil-filled operational equipment may not be provided with secondary containment. Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (i.e., those for pumps, compressors and other rotating equipment, including pumpjack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical

switches, and other systems containing oil solely to enable the operation of the device. An inspection or monitoring plan has been established for the oil-filled operational equipment that does not have secondary containment.

For the equipment and/or areas listed above, an Oil Spill Contingency Plan has been prepared and will be implemented in case of a spill.

A description of the secondary containment is provided in Table B-1 and in the facility diagram.

#### **B.1.10. Oil Production Facility Drainage [§112.9(b)(1) and (b)(2)]**

Small quantities of stormwater collected inside berms are typically lost through evaporation. Water accumulated in the secondary containment areas will be inspected prior to discharge to confirm that it does not pose a threat of a harmful discharge. A harmful discharge is defined as one that violates applicable water quality standards or causes a film or sheen upon or discoloration of surface water or adjoining shorelines.

Field drainage systems and road ditches will be visually inspected on a regular basis for accumulation of oil or oil impacted soil. Accumulations of oil will be recovered promptly and placed in the production system or taken to an approved disposal site. Discharges of stormwater will occur using the following procedures:

- Prior to discharge, water must be visually inspected for the presence of oil or oily sheen. If oil is present, water cannot be discharged and must be recovered and placed into the production system or taken to an approved disposal site.
- **All discharges of stormwater from secondary containment must be recorded.** The date of the discharge must be noted on the SPCC Drainage Inspection and Discharge Log form.

If the secondary containment is equipped with a drain, the drain must be closed and sealed when it is not in use. All secondary containment drains, if present, are shown on the facility diagram.

## TABLE B-1 SITE SPECIFIC DATA

FACILITY NAME: San Juan River Gas Plant

DATE: March 17, 2010

EQUIPMENT	CONTENTS	CAPACITY	TYPE	FIELD CONSTRUCTED	TYPE OF FAILURE	RATE (bbt/hr)	FLOW DIRECTION	CONTAINMENT
TK-1*	Condensate / Water	400.0	steel	No	Leak, Rupture, Overfill	400.0	NE	Northern
TK-2	Condensate	400.0	steel	No	Leak, Rupture, Overfill	400.0	NE	Northern
TK-3	Produced Water	400.0	steel	No	Leak, Rupture, Overfill	400.0	NE	Northern
T0-2 Surge Tank*	Condensate	430.0	steel	No	Leak, Rupture, Overfill	430.0	NE	Northern 2
T0-1 Piggled Liquids Receiver	Condensate / Water	350.0	steel	No	Leak, Rupture, Overfill	350.0	NE	Northern Area
TK-5	Diesel	7.0	steel	No	Leak, Rupture, Overfill	7.0	N	Products Storage
TK-6	Gasoline	7.0	steel	No	Leak, Rupture, Overfill	7.0	N	Products Storage
TK-7	Solvent	12.0	steel	No	Leak, Rupture, Overfill	12.0	N	Products Storage
TK-14*	Methanol	23.8	steel	No	Leak, Rupture, Overfill	23.8	N	Products Storage
TK-11	Diethanolamine	1048.0	steel	No	Leak, Rupture, Overfill	1048.0	N	Plant Area
TK-8901	Used Oil	23.8	steel	No	Leak, Rupture, Overfill	23.8	N	Plant Area
TK-8902	Engine Oil	23.8	steel	No	Leak, Rupture, Overfill	23.8	N	Plant Area
C-600	Engine Oil	12.0	steel	No	Leak, Rupture, Overfill	12.0	N	Plant Area
T-3	Y-Grade Product	1000.0	steel	No	Leak, Rupture, Overfill	1000.0	N	Plant Area
T-4	Y-Grade Product	1000.0	steel	No	Leak, Rupture, Overfill	1000.0	N	Plant Area
T-5	Y-Grade Product	1000.0	steel	No	Leak, Rupture, Overfill	1000.0	N	Plant Area
TK-8	Condensate / Water	143.0	steel	No	Leak, Rupture, Overfill	143.0	N	Plant Area
T-13	Condensate / Water	2381.0	steel	Yes	Leak, Rupture, Overfill	2381.0	N	Plant Area

T-17 Surge Tank	Glycol	20.0	steel	No	Leak, Rupture, Overfill	20.0	N	Plant Area
GV-500 Surge Tank	Glycol	53.4	steel	No	Leak, Rupture, Overfill	53.4	N	Plant Area
V-4106 Suction Scrubber	Produced Water	5.0	steel	No	Leak, Rupture, Overfill	5.0	N	Plant Area
V-5102 Suction Scrubber	Produced Water	28.33	steel	No	Leak, Rupture, Overfill	28.33	N	Plant Area
V-6 Inlet Scrubber	Produced Water	30.23	steel	No	Leak, Rupture, Overfill	30.23	N	Plant Area
V-5101 Suction Scrubber	Produced Water	28.33	steel	No	Leak, Rupture, Overfill	28.33	N	Plant Area
TK-13 Flare Knockout	Produced Water	71.4	steel	No	Leak, Rupture, Overfill	71.4	N	Plant Area
Lance Tank 1	Engine Oil	11.9	Steel	No	Leak, Rupture, Overfill	11.9	N	Plant Area
Lance Tank 2	Engine Oil	8.33	steel	No	Leak, Rupture, Overfill	8.33	N	Plant Area
Lance Tank 3	Methanol	8.33	steel	No	Leak, Rupture, Overfill	8.33	N	Plant Area
Steel Tank*	Used Oil	400.0	Steel	No	Leak, Rupture, Overfill	400.0	N	Used Oil
Total SPCC Volume: 9326.6 bbls								

\*Largest container size used to determine amount of secondary containment required.

NA - Not Applicable

Northern

**(1) Calculate Total Dike Capacity**

Containment = Length x Width x Height  
80 ft x 50 ft x 0.1 ft = 500 ft<sup>3</sup>  
500 ft<sup>3</sup> x 7.48 gal/ft<sup>3</sup> x 1 bbl/42 gal = **89.1 bbl**

**(2) Calculate Net Dike Capacity**

Net Capacity = Total Capacity - Displacement  
Displacement = Footprint x Dike Height  
TK-1 displacement = (Pi/4) x 144 ft<sup>2</sup> x 0.1 ft = 14.1 ft<sup>3</sup>  
14.1 ft<sup>3</sup> x 7.48 gal/ft<sup>3</sup> x 1 bbl/42 gal = 2.5 bbl  
TK-2 displacement = (Pi/4) x 144 ft<sup>2</sup> x 0.1 ft = 14.1 ft<sup>3</sup>  
14.1 ft<sup>3</sup> x 7.48 gal/ft<sup>3</sup> x 1 bbl/42 gal = 2.5 bbl  
TK-3 displacement = (Pi/4) x 144 ft<sup>2</sup> x 0.1 ft = 14.1 ft<sup>3</sup>  
14.1 ft<sup>3</sup> x 7.48 gal/ft<sup>3</sup> x 1 bbl/42 gal = 2.5 bbl  
Net Capacity = 89.1 bbl - 7.6 bbl = **81.5 bbl**

**(3) Calculate Freeboard**

Required Freeboard = Storm Event x Dike Footprint

The 24-hour 25-year storm event for the area is expected to produce 6 inches (0.5 ft) of precipitation.

$$0.5 \text{ ft} \times 4000 \text{ ft}^2 = 2000 \text{ ft}^3$$

$$2000 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = 356.2 \text{ bbl}$$

**(4) Calculate Excess Dike Capacity**

Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container

$$81.5 \text{ bbl} - 356.2 \text{ bbl} - 400 \text{ bbl} = -674.7 \text{ bbl of Excess Dike Capacity}$$

Northern 2

**(1) Calculate Total Dike Capacity**

Containment = Length x Width x Height

$$80 \text{ ft} \times 35 \text{ ft} \times 0.2 \text{ ft} = 466.7 \text{ ft}^3$$

$$466.7 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = 83.1 \text{ bbl}$$

**(2) Calculate Net Dike Capacity**

Net Capacity = Total Capacity - Displacement

Displacement = Footprint x Dike Height

$$\text{Net Capacity} = 83.1 \text{ bbl} - 0 \text{ bbl} = 83.1 \text{ bbl}$$

**(3) Calculate Freeboard**

Required Freeboard = Storm Event x Dike Footprint

The 24-hour 25-year storm event for the area is expected to produce 6 inches (0.5 ft) of precipitation.

$$0.5 \text{ ft} \times 2800 \text{ ft}^2 = 1400 \text{ ft}^3$$

$$1400 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = 249.4 \text{ bbl}$$

**(4) Calculate Excess Dike Capacity**

Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container

$$83.1 \text{ bbl} - 249.4 \text{ bbl} - 430 \text{ bbl} = -596.2 \text{ bbl of Excess Dike Capacity}$$

Northern Area

This containment group is not included in containment calculations

Products Storage

**(1) Calculate Total Dike Capacity**

Containment = Length x Width x Height

$$100 \text{ ft} \times 30 \text{ ft} \times 0.1 \text{ ft} = 375 \text{ ft}^3$$

$$375 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = 66.8 \text{ bbl}$$

**(2) Calculate Net Dike Capacity**

Net Capacity = Total Capacity - Displacement  
Displacement = Footprint x Dike Height  
Net Capacity = 66.8 bbl - 0 bbl = **66.8 bbl**

**(3) Calculate Freeboard**

Required Freeboard = Storm Event x Dike Footprint  
The 24-hour 25-year storm event for the area is expected to produce 3 inches (0.2 ft) of precipitation.  
 $0.2 \text{ ft} \times 3000 \text{ ft}^2 = 750 \text{ ft}^3$   
 $750 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{133.6 \text{ bbl}}$

**(4) Calculate Excess Dike Capacity**

Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container  
 $66.8 \text{ bbl} - 133.6 \text{ bbl} - 23.8 \text{ bbl} = \mathbf{-90.6 \text{ bbl of Excess Dike Capacity}}$

Plant Area

This containment group is not included in containment calculations

Used Oil

**(1) Calculate Total Dike Capacity**

Containment = Length x Width x Height  
 $36 \text{ ft} \times 40 \text{ ft} \times 2 \text{ ft} = 2880 \text{ ft}^3$   
 $2880 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{512.9 \text{ bbl}}$

**(2) Calculate Net Dike Capacity**

Net Capacity = Total Capacity - Displacement  
Displacement = Footprint x Dike Height  
Steel Tank displacement =  $(\text{Pi}/4) \times 144 \text{ ft}^2 \times 2 \text{ ft} = 226.2 \text{ ft}^3$   
 $226.2 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = 40.3 \text{ bbl}$   
Net Capacity =  $512.9 \text{ bbl} - 40.3 \text{ bbl} = \mathbf{472.7 \text{ bbl}}$

**(3) Calculate Freeboard**

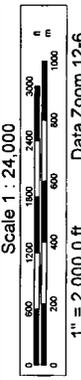
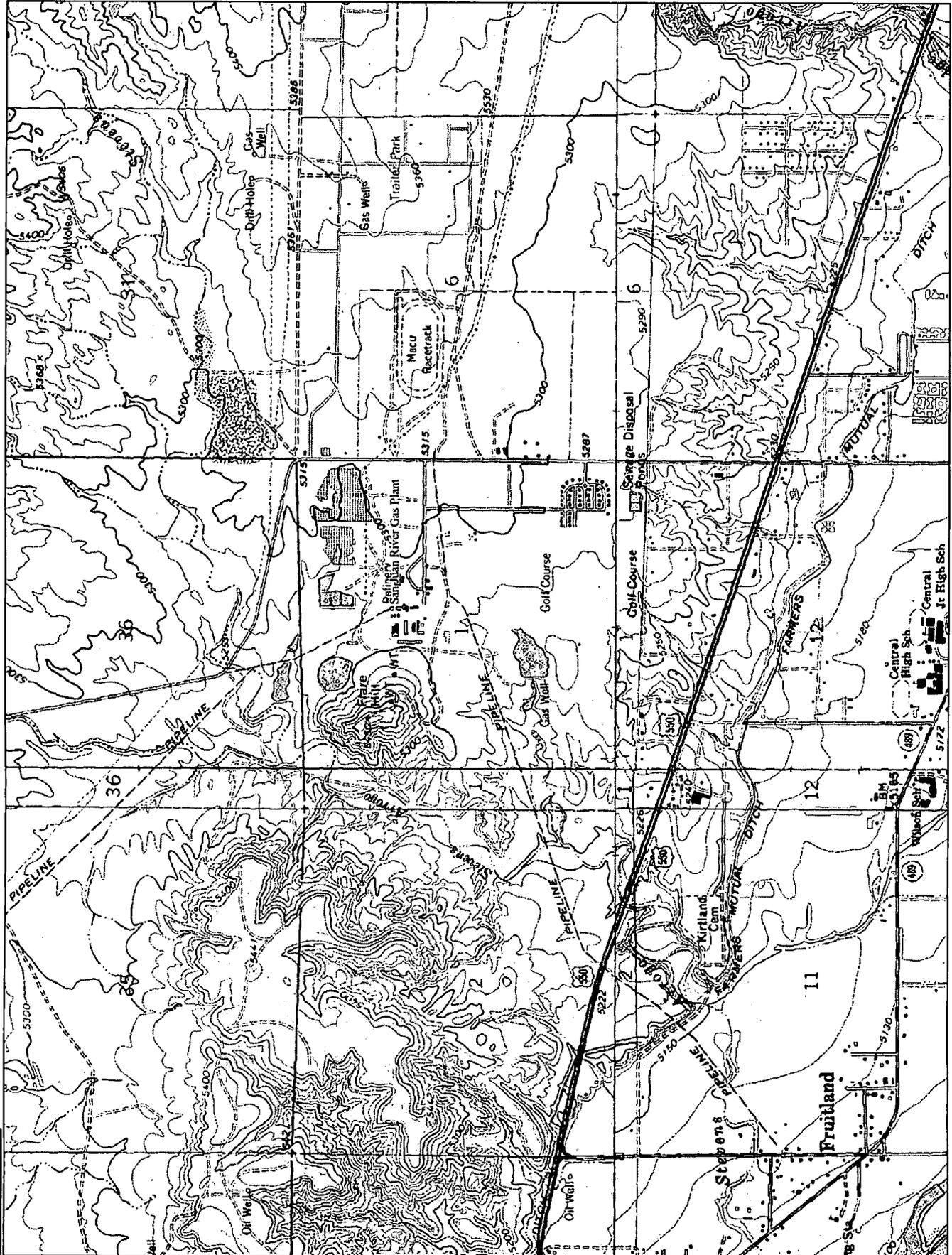
Required Freeboard = Storm Event x Dike Footprint  
The 24-hour 25-year storm event for the area is expected to produce 12 inches (1 ft) of precipitation.  
 $1 \text{ ft} \times 1440 \text{ ft}^2 = 1440 \text{ ft}^3$   
 $1440 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{256.5 \text{ bbl}}$

**(4) Calculate Excess Dike Capacity**

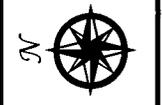
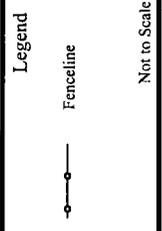
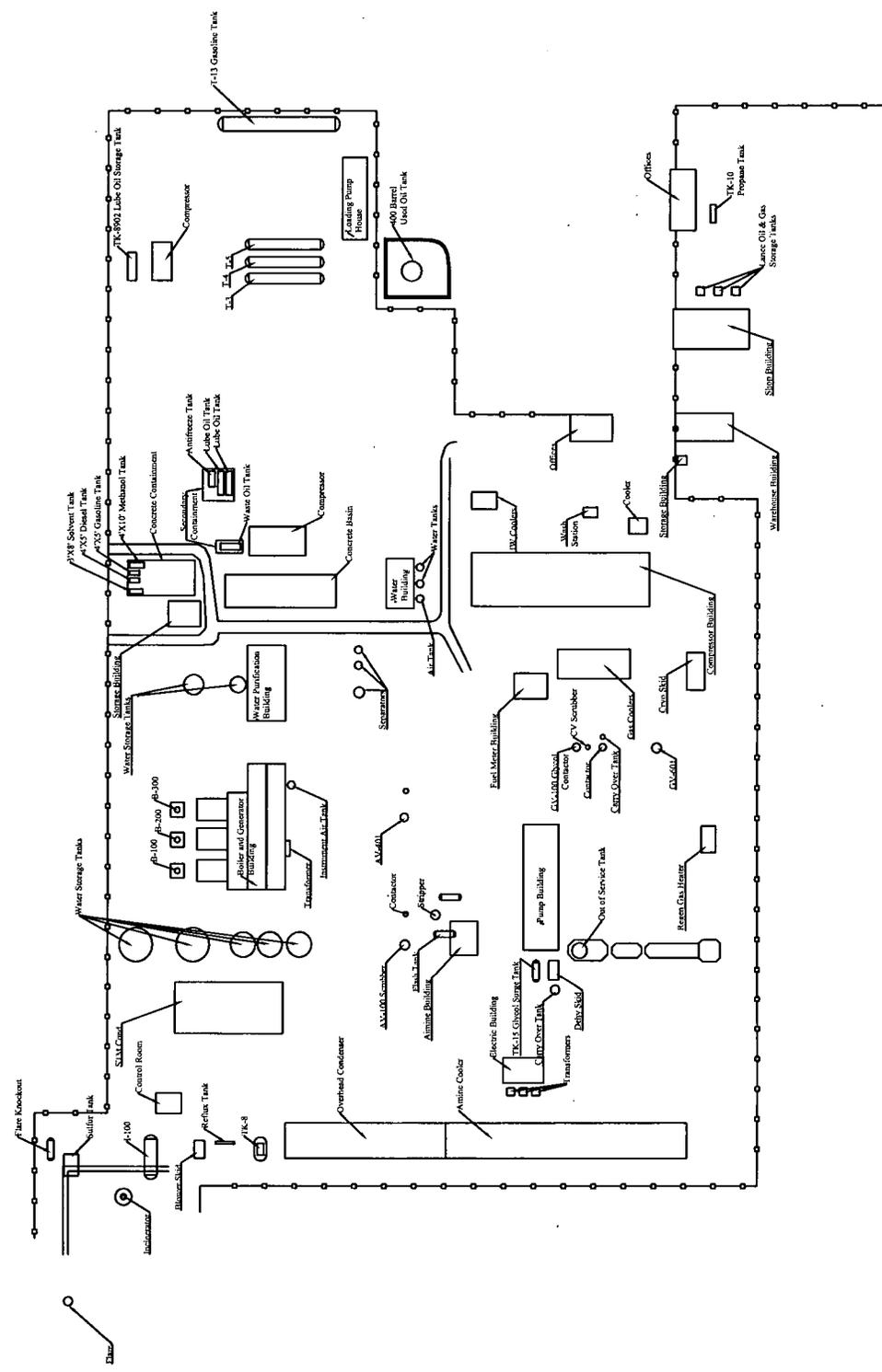
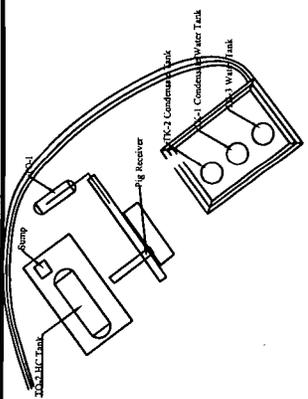
Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container  
 $472.7 \text{ bbl} - 256.5 \text{ bbl} - 400 \text{ bbl} = \mathbf{-183.8 \text{ bbl of Excess Dike Capacity}}$

**FIGURES**

**FIGURE B-1**



**FIGURE B-2 (optional)**



Site Map  
 San Juan River Gas Plant  
 Western Gas Resources, Inc.  
 San Juan County, New Mexico  
 December 15, 2008



**APPENDIX D - RMP**



Facility Name: San Juan River Gas Plant  
 EPA ID: 1000 0013 0093

*San Juan River*



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 WASHINGTON, D.C. 20460

OFFICE OF  
 SOLID WASTE AND EMERGENCY  
 RESPONSE

Western Gas Resources, Inc.  
 1099 - 18th St.  
 Suite 1200  
 Denver, CO 80202

July 30, 2004

EPA Facility ID#: 1000 0013 0093  
 Postmark Date: 06/21/2004  
 Anniversary Date: 06/21/2009

NOTIFICATION LETTER: COMPLETE RMP

The U.S. Environmental Protection Agency (EPA) received your Risk Management Plan (RMP) dated with the above postmark date. This letter notifies you that your RMP is "complete" according to EPA's completion check. The completion check is a program implemented by EPA to determine whether a submitted RMP includes the minimum amount of information every RMP must provide. The completion check does not assess whether a submitted RMP should have provided additional information or whether the information it provides is accurate or appropriate. In other words, it does not indicate that the RMP meets the requirements of 40 CFR Part 68.

Please note the anniversary date indicated above. Your RMP must be revised and updated by this date or earlier as required by 40 CFR §68.190. Please also note your EPA Facility ID number as identified at the top of this letter; all future Risk Management Plan submissions, corrections and other correspondence must include this number.

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

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If you have any questions, please call one of the following numbers:

(1) For RMP rule interpretation questions, call the EPCRA Hotline at (800) 424-9346 or (703) 412-9810 (in the D.C. Metro area).

(2) For RMP\*Submit installation and software questions, or information on the status of your RMP, contact the RMP Reporting Center at (301) 429-5018, or write to the:

RMP Reporting Center  
P.O. Box 1515  
Lanham-Seabrook, MD 20703-1515

(3) For more information on the Risk Management Program, you can contact your Implementing Agency. Your Implementing Agency is  
**U.S. EPA Region 6, Superfund Division (6SF-RP), 1445 Ross Avenue, Dallas, TX, 75202-2733, Phone: 214-665-2292.**

Thank you for your cooperation in this matter.

Sincerely,

RMP Reporting Center

Enclosure:

Risk Management Plan (if submitted on paper)

CERTLP23.txt  
Certification Letter

Certification Statement for Program Level 2 & 3 Processes

To the best of the undersigned's knowledge, information, and belief formed after reasonable inquiry, the information submitted is true, accurate, and complete.

*Ed Aabak*  
Signature

Ed Aabak  
Print Name

Executive VP Midstream  
Title

6/16/09  
Date

EPA Facility ID #1000 0013 0093

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

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## RMP Report for San Juan River Gas Plant

### Section 1. Registration Information

1.1 Source Identification: Facility ID: 12 There were no reportable accidents in the last 5 years.

- a. Facility Name: San Juan River Gas Plant
- b. Parent Company #1 Name: Western Gas Resources, Inc.
- c. Parent Company #2 Name:

1.2 EPA Facility Identifier: 1000 0013 0093

1.3 Other EPA Systems Facility ID:

1.4 Dun and Bradstreet Numbers (DUNS):

- a. Facility DUNS:
- b. Parent Company #1 DUNS: 606413052
- c. Parent Company #2 DUNS:

1.5 Facility Location Address:

- a. Street 1: 99 Road 6500
- b. Street 2:
- c. City: Kirtland d. State: NM e. Zip: 87417 -
- f. County: San Juan

Facility Latitude and Longitude:

- g. Lat. (dd.dddddd): 36.757500 h. Long. (ddd.dddddd): -108.367900
- i. Lat/Long Method: GO GPS - Unspecified
- j. Lat/Long Description: CE Center of Facility
- k. Horizontal accuracy measure (m): 20
- l. Horizontal Reference Datum Code: 002 North American Datum of 1983
- m. Source Map Scale Number:

1.6 Owner or Operator:

- a. Name: Western Gas Resources, Inc.
- b. Phone: (303) 452-5603
- Mailing address:
- c. Street 1: 1099 - 18th St. d. Street 2: Suite 1200
- e. City: Denver f. State: CO g. Zip: 80202 -

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

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**1.7 Name and title of person or position responsible for part 68 (RMP) implementation:**

- a. Name of person:
- b. Title of person or position: Executive VP Midstream
- c. Email address:

**1.8 Emergency contact:**

- a. Name: Kent McEvers
- b. Title: Area Manager
- c. Phone: (505) 326-4054
- d. 24-hour phone: (505) 860-7208
- e. Ext. or PIN:
- f. Email address: kmcevers@westerngas.com

**1.9 Other points of contact:**

- a. Facility or Parent Company E-Mail Address:
- b. Facility Public Contact Phone:
- c. Facility or Parent Company WWW Homepage Address:

1.10 LEPC: San Juan LEPC

1.11 Number of full time employees on site: 20

**1.12 Covered by:**

- a. OSHA PSM: Yes
- b. EPCRA 302: No
- c. CAA Title V: Yes Air operating permit ID: P-108

1.13 OSHA Star or Merit Ranking: No

1.14 Last Safety Inspection (by an External Agency) Date:

1.15 Last Safety Inspection Performed by an External Agency: Never had one

1.16 Will this RMP involve predictive filing?: No

**1.18 RMP Preparer Information:**

- a. Name:
- b. Telephone:
- c. Street1:

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

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d. Street2:

e. City:

f. State:

g. ZIP:

## Section 1.17 Process(es)

a. Process ID: 7 Program Level 3 NGL Storage

b. NAICS Code

211112 Natural Gas Liquid Extraction

c. Process Chemicals

c.1 Process Chemical (ID / Name)	c.2 CAS Nr.	c.3 Qty (lbs.)
7 Flammable Mixture	00-11-11	1,200,000
Pentane	109-66-0	
Isopentane [Butane, 2-methyl-]	78-78-4	
Butane	106-97-8	
Isobutane [Propane, 2-methyl]	75-28-5	
Propane	74-98-6	
Ethane	74-84-0	
Methane	74-82-8	

**Section 2. Toxics: Worst Case --- No Data To Report**

**Section 3. Toxics: Alternative Release --- No Data To Report**

**Section 4. Flammables: Worst Case**

**Flammables: Worst Case ID 6**

4.1 Chemical Name: Flammable Mixture

4.2 Model used: EPA's RMP\*Comp(TM)

4.3 Scenario: Vapor Cloud Explosion

4.4 Quantity released: 516,601 lbs

4.5 Endpoint used: 1 PSI

4.6 Distance to Endpoint: 0.60 mi

4.7 Estimated Residential population within distance to endpoint: 0

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

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**4.8 Public receptors within distance to endpoint:**

a. Schools:	No	d. Prisons/Correction facilities:	No
b. Residences:	No	e. Recreation areas:	Yes
c. Hospitals:	No	f. Major commercial, office, or industrial areas:	No
g. Other (Specify):			

**4.9 Environmental receptors within distance to endpoint:**

a. National or state parks, forests, or monuments:	No
b. Officially designated wildlife sanctuaries, preserves, or refuges:	No
c. Federal wilderness areas:	No
d. Other (Specify):	

**4.10 Passive mitigation considered:**

a. Blast walls:	No
b. Other (Specify):	

**4.11 Graphic file name:**

## Section 5. Flammables: Alternative Release

### Flammables: Alternative Release ID: 2

5.1 Chemical Name:	Flammable Mixture		
5.2 Model used:	EPA's RMP*Comp(TM)		
5.3 Scenario:	Vapor Cloud Explosion		
5.4 Quantity released:	29,845 lbs		
5.5 Endpoint used:	1 PSI	LFL value:	% Volume
5.6 Distance to Endpoint:	0.20 mi		
5.7 Estimated Residential population within distance to endpoint:	0		

**5.8 Public receptors within distance to endpoint:**

a. Schools:	No	d. Prisons/Correction facilities:	No
b. Residences:	No	e. Recreation areas:	No
c. Hospitals:	No	f. Major commercial, office, or industrial areas:	No
g. Other (Specify):			

**5.9 Environmental receptors within distance to endpoint:**

a. National or state parks, forests, or monuments:	No
b. Officially designated wildlife sanctuaries, preserves, or refuges:	No

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

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- c. Federal wilderness areas: No
- d. Other (Specify):

5.10 Passive mitigation considered:

- a. Dikes: No
- b. Fire walls: No
- c. Blast walls: No
- d. Enclosures: No
- e. Other (Specify):

5.11 Active mitigation considered:

- a. Sprinkler system: No
- b. Deluge systems: No
- c. Water curtain: No
- d. Excess flow valve: Yes
- e. Other (Specify):

5.12 Graphic file name:

## Section 6. Accident History --- No Data To Report

## Section 7. Prevention Program 3

Process ID: 7 NGL Storage

Prevention Program ID: 3

**Prevention Program Description:** This is a cryogenic plant designed to recover liquids from field grade natural gas. The plant is also designed to remove small amounts of Hydrogen Sulfide from the inlet stream and convert it to elemental sulfur. The plant is not designed to fractionate the liquids. The liquids are pumped from the plant through a pipeline. If the pumps are out of service, it is possible to store some liquids and haul them out in pressurized tanker trucks. It is due to the capability to store these liquids and the liquids off the stabilizer that the plant meets the Program level 3 requirements. These tanks are protected by relief valves which are properly sized to prevent vessel failure. Additionally, the liquid levels are routinely checked to prevent overfilling these tanks. This facility is manned 24/7 by trained operators.

7.1 NAICS Code 211112

7.2 Chemicals Chemical Name  
Flammable Mixture

7.3 Date on which the safety information was last reviewed or revised: 02/10/2003

7.4 Process Hazard Analysis (PHA):

a. Date of last PHA or PHA update: 02/10/2003

b. The technique used:

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

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What If: No Failure Mode and Effects Analysis: No  
Checklist: No Fault Tree Analysis: No  
What If/Checklist: Yes Other (Specify): modified what If/checklist  
HAZOP: No

c. Expected or actual date of completion of all changes from last PHA or PHA update: 02/10/2003

d. Major hazards identified:

Toxic release:	No	Contamination:	No
Fire:	Yes	Equipment failure:	Yes
Explosion:	Yes	Loss of cooling, heating, electricity, instrument air:	No
Runaway reaction:	No	Earthquake:	No
Polymerization:	No	Floods (flood plain):	No
Overpressurization:	No	Tornado:	No
Corrosion:	Yes	Hurricanes:	No
Overfilling:	Yes	Other (Specify):	

e. Process controls in use:

Vents:	Yes	Emergency air supply:	Yes
Relief valves:	Yes	Emergency power:	No
Check valves:	Yes	Backup pump:	Yes
Scrubbers:	Yes	Grounding equipment:	Yes
Flares:	Yes	Inhibitor addition:	Yes
Manual shutoffs:	Yes	Rupture disks:	No
Automatic shutoffs:	Yes	Excess flow device:	Yes
Interlocks:	No	Quench system:	No
Alarms and procedures:	Yes	Purge system:	No
Keyed bypass:	No	None:	No
		Other (Specify):	

f. Mitigation systems in use:

Sprinkler system:	No	Water curtain:	No
Dikes:	No	Enclosure:	No
Fire walls:	No	Neutralization:	No
Blast walls:	No	None:	Yes
Deluge system:	No	Other (Specify):	

g. Monitoring/detection systems in use:

Process area detectors:	Yes	None:	No
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Perimeter monitors: No Other (Specify):

**h. Changes since last PHA or PHA update:**

Reduction in chemical inventory:	No	Installation of perimeter monitoring systems:	No
Increase in chemical inventory:	Yes	Installation of mitigation systems:	No
Change process parameters:	No	None recommended:	No
Installation of process controls:	No	None:	No
Installation of process detection systems:	No	Other (Specify):	

**7.5 Date of most recent review or revision of operating procedures:** 11/14/2003

**7.6 Training:**

**a. The date of the most recent review or revision of training programs:** 11/14/2003

**b. The type of training provided:**

Classroom: No On the job: Yes Other (Specify):

**c. The type of competency testing used:**

Written test: No Observation: Yes

Oral test: Yes Other (Specify):

Demonstration: Yes

**7.7 Maintenance:**

**a. The date of the most recent review or revision of maintenance procedures:** 11/14/2003

**b. The date of the most recent equipment inspection or test:** 12/11/2003

**c. Equipment most recently inspected or tested :** thickness testing of piping and vessels

**7.8 Management of change:**

**a. The date of the most recent change that triggered management of change procedures:** 05/10/2004

**b. The date of the most recent review or revision of management of change procedures:** 06/01/2004

**7.9 The date of the most recent pre-startup review:** 07/03/2002

**7.10 Compliance audits:**

**a. The date of the most recent compliance audit:** 07/31/2003

**b. Expected date of completion of all changes resulting from the compliance audit:** 11/11/2003

**7.11 Incident investigation:**

**a. The date of the most recent incident investigation (if any):**

**b. Expected or actual date of completion of all changes resulting from the investigation:**

**7.12 The date of the most recent review or revision of employee participation plans:** 05/27/2004

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7.13 The date of the most recent review or revision of hot work permit procedures: 03/17/2004  
7.14 The date of the most recent review or revision of contractor safety procedures: 06/01/2004  
7.15 The date of the most recent evaluation of contractor safety performance: 06/01/2004

## Section 8. Prevention Program 2 --- No Data To Report

## Section 9. Emergency Response

### 9.1 Written Emergency Response (ER) Plan:

- a. Is facility included in written community emergency response plan? Yes  
b. Does facility have its own written emergency response plan? Yes

9.2 Does facility's ER plan include specific actions to be taken in response to accidental releases of regulated substance(s)? Yes

9.3 Does facility's ER plan include procedures for informing the public and local agencies responding to accidental releases? Yes

9.4 Does facility's ER plan include information on emergency health care? Yes

9.5 Date of most recent review or update of facility's ER plan: 05/20/2004

9.6 Date of most recent ER training for facility's employees: 11/14/2003

### 9.7 Local agency with which facility's ER plan or response activities are coordinated:

- a. Name of agency: Kirtland Fire Department  
b. Telephone number: (505) 598-5311

### 9.8 Subject to:

- a. OSHA Regulations at 29 CFR 1910.38: Yes  
b. OSHA Regulations at 29 CFR 1910.120: No  
c. Clean Water Act Regulations at 40 CFR 112: Yes  
d. RCRA Regulations at 40 CFR 264, 265, and 279.52: Yes  
e. OPA-90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, or 30 CFR 254: Yes  
f. State EPCRA Rules/Law: No  
g. Other (Specify):

## Executive Summary

**Risk Management Plan (2004 update)  
Executive Summary for the San Juan River Gas Processing Facility**

**Accidental Release Prevention and Response Policies**

The San Juan River Gas Plant has a longstanding commitment to worker and public safety. Our commitment is supported by the resources invested in accident prevention, personnel training and the consideration of safety issues in the design, construction, operation and maintenance of our facilities. Our policy is to implement reasonable controls to provide a safe operation and prevent foreseeable releases of regulated substances. However, if a release does occur, trained gas plant personnel will respond to control and contain the release.

**Description of the Stationary Source and Regulated Substances**

The San Juan River gas plant is located about 10 miles west of Farmington, New Mexico. The facility includes compression, amine gas treating, liquids stabilization, Claus sulfur recovery plant, dehydration, and a cryogenic liquid recovery plant. The plant produces a lean, dry residue gas stream, a mixed natural gas liquid stream (NGL) and a liquid sulfur stream. The liquid products contain ethane, propane, butanes, pentanes and heavier components. The plant handles regulated flammables such as ethane, propane, mixed butanes and mixed pentanes. The plant uses an amine process to remove carbon dioxide and hydrogen sulfide but does not contain threshold quantities of any materials classified as toxic. There are not toxic release scenarios to consider at the San Juan River plant.

**Offsite Consequence Analysis Results**

This narrative has been deleted as directed by the regulation.

**General Accidental Release Prevention Program**

The following is a summary of the accident prevention program in place at the plant. The processes at the plant are regulated by the Environmental Protection Agency's (EPA's) Risk Management Program (RMP) and the Occupational Safety and Health Administration's (OSHA's) process safety management (PSM) standard. The following summary addresses each of the OSHA PSM elements and describes the management system in place to implement the accident prevention program.

**Employee Participation**

The San Juan River gas plant requires employees to participate in all facets of process management and accident prevention. Examples of employee participation range from updating and compiling technical documents and chemical information to participating as a member of a process hazard analysis (PHA) team. Employees have access to all information created as part of the gas plant accident prevention program. Specific ways that employees are involved in the accident prevention program are documented in an employee participation plan that is maintained at the gas plant and addresses each accident prevention program element. In addition the gas plant has a number of initiatives under way that address process and employee safety issues. These include development of standardized operating procedures, incident investigation, management of change, safe work practices, our "Safe Start" program and participation in flowsheet reviews.

**Process Safety Information**

The San Juan River gas plant keeps a variety of technical documents that are used to help maintain safe operation of the process. These documents address chemical properties and associated hazards, limits for key process parameters, and equipment design basis/configuration information. The Operations group has been assigned responsibility for maintaining up-to-date process safety information. The location of these documents is readily available to help employees locate any necessary process safety information.

Chemical-specific information, including exposure hazards and emergency response/exposure treatment consideration, is provided in material safety data sheets (MSDSs). This information is supplemented by documents that specifically address known corrosion concerns and any known hazards associated with the inadvertent mixing of chemicals. For specific process areas, the gas plant has documented safety related limits for specific process parameters in operating manuals. The gas plant ensures that the process is maintained within these limits using process controls and monitoring instruments, highly trained personnel and protective instrument systems (e.g., automated shutdown systems).

The gas plant maintains numerous technical documents that provide information about the design and construction of process equipment. This information includes materials of construction, design pressure and temperature ratings, and electrical rating of equipment. This information in combination with written procedures and trained personnel, provides a basis for establishing inspection and maintenance activities, as well as for evaluating proposed process and facility changes to ensure that safety features in the process are not

compromised.

#### Process Hazard Analysis

The San Juan River gas plant has a comprehensive program to ensure that hazards associated with the various processes are identified and controlled. Within this program each process is systematically examined to identify hazards and ensure that adequate controls are in place to manage these hazards.

The San Juan River gas plant uses the process hazards analysis (PHA) technique to perform these evaluations. These reviews are conducted using a team of people who have operating and maintenance experience as well as engineering expertise. This team identifies and evaluates hazards of the process as well as accident prevention and mitigation measures. The team makes suggestions for additional prevention and/or mitigation measures when the team believes such measures are necessary.

If necessary the PHA team findings are forwarded to local and corporate management for resolution. Implementation of mitigation options in response to PHA findings is based on a relative risk ranking assigned by the PHA team. This ranking helps ensure that potential accident scenarios assigned the highest risk receive immediate attention.

To help ensure that the process controls and/or process hazards do not eventually deviate significantly from the original design safety features, the plant periodically updates and revalidates the hazard analysis results. These periodic reviews are conducted at least every 5 years and will be conducted at this frequency until the process is no longer operating. The results and findings from these updates are documented and retained.

#### Operating Procedures

The San Juan River gas plant maintains written procedures that address various modes of process operations, such as unit startup, normal operations, emergency shutdown and normal shutdown. These procedures can be used as a reference by experienced operators and provide a basis for consistent training of new operators. These procedures are periodically reviewed to ensure they are current and accurate. The procedures are also kept current and accurate by revising them as necessary to reflect changes made through the management of change process.

#### Training

To complement the written process operating procedures, the San Juan River gas plant has a comprehensive training program for all employees involved in operating a process. New employees receive basic training in gas plant operations if they are not already familiar with such operations. After successfully completing this training, a new operator is paired with a senior operator to learn process-specific duties and tasks. After operators demonstrate the knowledge to perform the duties and tasks in a safe manner on their own, they can work independently. In addition, all operators periodically receive refresher training on the operating procedures to ensure that their skills and knowledge are maintained at an acceptable level. This refresher training is conducted at least every 3 years. All training is documented for each operator, including the means used to verify the operators understanding of the training.

#### Contractors

The San Juan River gas plant uses contractors to supplement its work force during periods of increased maintenance or construction activities. Because some contractors work on or near process equipment, the gas plant has procedures in place to ensure that contractors 1) perform their work in a safe manner, 2) have the appropriate knowledge and skills, 3) are aware of the hazards in their workplace, 4) understand what they should do in the event of an emergency, 5) understand and follow site safety rules, and 6) inform gas plant personnel of any hazards that they find during their work. This is accomplished by providing contractors with 1) process overview, 2) information about safety and health hazards, 3) emergency response plan requirements, 4) safe work practices prior to their beginning work, 5) safe and hot work permits as required. In addition the San Juan River gas plant evaluates contractor safety programs and performance during the selection of a contractor.

#### Pre-startup Safety Reviews (PSSRs)

The San Juan River gas plant conducts a PSSR for any new facility or facility modification that requires a change in the process safety information. The purpose of the PSSR is to ensure that safety features, procedures, personnel and equipment are appropriately prepared for startup prior to placing the equipment into service. This review provides one additional check to make sure construction is in accordance with the design specifications and that all supporting systems are operationally ready. The PSSR review team uses checklists to verify all aspects of readiness. A PSSR involves field verification of the construction and serves as a quality assurance mechanism verifying that accident prevention program requirements are properly implemented.

#### Mechanical Integrity

The San Juan River gas plant has well established practices and procedures to maintain pressure vessels, piping systems, relief and vent systems, controls, pumps, heat exchangers, compressors and emergency shutdown systems in a safe operating condition. The basic aspects of this program include: 1) conducting training, 2) developing written procedures, 3) performing inspections and tests, 4) correcting identified deficiencies, and 5) applying quality assurance measures. In combination these activities form a system that maintains the mechanical integrity of the process. All of these activities are tracked and documented using Avantis, an asset manager database.

Maintenance personnel receive training on 1) an overview of the process, 2) safety and health hazards, 3) applicable maintenance procedures, 4) emergency response plans, and 5) applicable safe work practices to help ensure that they can perform their jobs in a safe manner. Written procedures help ensure that work is performed in a consistent manner and provide a basis for training. Inspections and tests are performed to verify that equipment parameters are within acceptable limits. For a vessel, the parameter being monitored would typically be wall thickness. If a deficiency is identified, employees will correct the deficiency before placing the equipment back into service (if possible) or a management of change team will review the use of the equipment and determine what actions are necessary to ensure the safe operation of the equipment.

#### Safe Work Practices

The San Juan River gas plant has long standing safe work practices in place to help ensure worker and process safety. Examples of these include 1) control of the entry/presence/exit of support personnel, 2) a lockout/tagout procedure to ensure isolation of energy sources for equipment undergoing maintenance, 3) a procedure for safe removal of hazardous substances before process piping or equipment is opened, 4) a permit and procedure to control spark producing activities (i.e. hot work), and 5) a permit and procedure to ensure that adequate precautions are in place before entry into a confined space. These procedures along with training of affected personnel form a system to help ensure that operations and maintenance activities are performed safely.

#### Management of Change

The San Juan River gas plant has a comprehensive system to manage changes to all covered processes. This system requires that changes to items such as process equipment, chemicals, technology, procedures and other facility changes be properly reviewed and authorized before being implemented. Changes are reviewed to 1) ensure that adequate controls are in place to manage any new hazards, 2) verify that existing controls have not been compromised by the change, and 3) ensure that changes do not introduce an unknown hazard to the process. Affected chemical hazard information, process operating limits and equipment information, as well as procedures are updated to incorporate these changes. In addition, operating and maintenance personnel are provided necessary training on the change.

#### Incident Investigation

The San Juan River gas plant promptly investigates all incidents that resulted in, or reasonably could have resulted in a fire/explosion, major property damage, environmental loss or personal injury. The goal of each investigation is to determine the facts and develop corrective actions to prevent a recurrence of the incident or a similar incident. The investigation team documents its findings, develops recommendations to prevent a recurrence and forwards these results to gas plant management for resolution. The final resolution of each finding or recommendation is documented and the investigation results reviewed with all employees who could be affected by the findings. Incident investigation reports are retained for at least 5 years so that the reports can be reviewed during future PHAs.

#### Compliance Audits

To guarantee that the accident prevention program is functioning properly, the San Juan River gas plant audits to determine that the procedures and practices required by the accident prevention program are being implemented. Compliance audits are conducted at least every 3 years. Both hourly and staff personnel participate as audit team members. The audit team develops findings that are forwarded to gas plant management for resolution.

#### Chemical -Specific Prevention Steps

The processes at the San Juan River gas plant have hazards that must be managed to ensure continued safe operation. The following is a description of existing safety features applicable to prevention of accidental releases of regulated substances in the facility.

#### Universal Prevention Activities

The accident prevention program summarized previously is applied to all RMP covered processes at the San

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

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Juan River gas plant. Collectively these prevention program activities help prevent potential accident scenarios that could be caused by equipment failure and human errors.

#### Specialized Safety Features

The San Juan River gas plant has safety features on many units to help 1) contain/control a release, 2) quickly detect a release, and 3) reduce the consequence of a release. The following types of safety features are used in the covered processes:

- Release Detection- Hydrocarbon and hydrogen sulfide detectors with alarms  
Release Containment/Control- Process relief valves that discharge to a flare which will capture and incinerate episodic releases
- Valves to permit isolation of portions of, or the entire process
  - Automated shutdown systems for specific process parameters
  - Curbing or diking to contain liquid releases
  - Redundant equipment and instrumentation (e.g. UPS system)
  - Atmospheric relief devices
    - Overall Plant and local area ESDs
- Release Mitigation- Manually operated fire extinguishing systems
- Trained emergency response personnel
  - Personnel protective equipment (e.g. self contained breathing equipment)

#### Five Year Accident History

In the last five years there have not been any hydrocarbon releases whose quantities approached those described in the RMP release events.

#### Emergency Response Program Information

The San Juan River gas plant maintains a written emergency response program, which is in place to protect worker and public safety and the environment. The program consists of procedure for responding to a release of a regulated substance, including the possibility of a fire or explosion if a flammable substance is accidentally released. The procedures address all aspects of emergency response, including proper first aid and medical treatment for exposures, evacuation plans and accounting for personnel after an evacuation, notification of local emergency response agencies and the public if a release occurs, and post incident cleanup. In addition the plant has procedures that address maintenance, inspection and testing of emergency equipment. Employees receive training in these procedures as necessary to perform their specific emergency response duties. The emergency response program is updated when necessary based on modifications made to the plant. The emergency response program changes are administered through the MOC process, which includes informing and/or training affected personnel in the changes.

The overall emergency response program of the San Juan River gas plant is coordinated with the San Juan County and Kirtland Fire Departments and local emergency planning committee (LEPC). This coordination includes periodic meeting of the committee, which includes local emergency response officials, local government officials and industry representatives. The San Juan River gas plant has around the clock communications capability with appropriate LEPC officials and emergency response organizations. This provides a means of notifying the public of an incident, if necessary, as well as facilitating quick response to emergency situations. The San Juan River gas plant conducts periodic emergency drills that involve the local emergency response organizations and the gas plant provides annual refresher training to local emergency responder regarding the hazards of regulated substances in the gas plant.

#### Planned Changes to Improve Safety

The San Juan River plant has annual training on the emergency response plan. This training has included the local emergency response groups including, local ambulance services and the local fire departments. These training sessions are audited by WGR Safety Personnel

## RMP Validation Errors/Warnings --- No Data To Report

# **Risk Management Plan (2004 update)**

## **Executive Summary for the San Juan River Gas Processing Facility**

### **Accidental Release Prevention and Response Policies**

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operationally ready. The PSSR review team uses checklists to verify all aspects of readiness. A PSSR involves field verification of the construction and serves as a quality assurance mechanism verifying that accident prevention program requirements are properly implemented.

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procedures are updated to incorporate these changes. In addition, operating and maintenance personnel are provided necessary training on the change.

#### Incident Investigation

The San Juan River gas plant promptly investigates all incidents that resulted in, or reasonably could have resulted in a fire/explosion, major property damage, environmental loss or personal injury. The goal of each investigation is to determine the facts and develop corrective actions to prevent a recurrence of the incident or a similar incident. The investigation team documents its findings, develops recommendations to prevent a recurrence and forwards these results to gas plant management for resolution. The final resolution of each finding or recommendation is documented and the investigation results reviewed with all employees who could be affected by the findings. Incident investigation reports are retained for at least 5 years so that the reports can be reviewed during future PHAs.

#### Compliance Audits

To guarantee that the accident prevention program is functioning properly, the San Juan River gas plant audits to determine that the procedures and practices required by the accident prevention program are being implemented. Compliance audits are conducted at least every 3 years. Both hourly and staff personnel participate as audit team members. The audit team develops findings that are forwarded to gas plant management for resolution.

#### Chemical -Specific Prevention Steps

The processes at the San Juan River gas plant have hazards that must be managed to ensure continued safe operation. The following is a description of existing safety features applicable to prevention of accidental releases of regulated substances in the facility.

#### Universal Prevention Activities

The accident prevention program summarized previously is applied to all RMP covered processes at the San Juan River gas plant. Collectively these prevention program activities help prevent potential accident scenarios that could be caused by equipment failure and human errors.

#### Specialized Safety Features

The San Juan River gas plant has safety features on many units to help 1) contain/control a release, 2) quickly detect a release, and 3) reduce the consequence of a release. The following types of safety features are used in the covered processes:

*Release Detection-* Hydrocarbon and hydrogen sulfide detectors with alarms  
*Release Containment/Control-* Process relief valves that discharge to a flare which will capture and incinerate episodic releases

- Valves to permit isolation of portions of, or the entire process
- Automated shutdown systems for specific process parameters
- Curbing or diking to contain liquid releases
- Redundant equipment and instrumentation (e.g. UPS system)
- Atmospheric relief devices
- Overall Plant and local area ESDs

*Release Mitigation- Manually operated fire extinguishing systems*

- Trained emergency response personnel
- Personnel protective equipment (e.g. self contained breathing equipment)

**Five Year Accident History**

In the last five years there have not been any hydrocarbon releases whose quantities approached those described in the RMP release events.

**Emergency Response Program Information**

The San Juan River gas plant maintains a written emergency response program, which is in place to protect worker and public safety and the environment. The program consists of procedure for responding to a release of a regulated substance, including the possibility of a fire or explosion if a flammable substance is accidentally released. The procedures address all aspects of emergency response, including proper first aid and medical treatment for exposures, evacuation plans and accounting for personnel after an evacuation, notification of local emergency response agencies and the public if a release occurs, and post incident cleanup. In addition the plant has procedures that address maintenance, inspection and testing of emergency equipment. Employees receive training in these procedures as necessary to perform their specific emergency response duties. The emergency response program is updated when necessary based on modifications made to the plant. The emergency response program changes are administered through the MOC process, which includes informing and/or training affected personnel in the changes.

The overall emergency response program of the San Juan River gas plant is coordinated with the San Juan County and Kirtland Fire Departments and local emergency planning committee (LEPC). This coordination includes periodic meeting of the committee, which includes local emergency response officials, local government officials and industry representatives. The San Juan River gas plant has around the clock communications capability with appropriate LEPC officials and emergency response organizations. This provides a means of notifying the public of an incident, if necessary, as well as facilitating quick response to emergency situations. The San Juan River gas plant conducts periodic emergency drills that involve the local emergency response organizations and the gas plant provides annual refresher training to local emergency responder regarding the hazards of regulated substances in the gas plant.

**Planned Changes to Improve Safety**

The San Juan River plant has annual training on the emergency response plan. This training has included the local emergency response groups including, local ambulance services and the local fire departments. These training sessions are audited by WGR Safety Personnel.

Results of Consequence Analysis

CHEMICAL NAME	CAS #	WEIGHT (lbs)
Butane	106-97-8	70284
Ethane	74-84-0	11322
Isobutane [Propane, 2-methyl]	75-28-5	17266
Isopentane [Butane, 2-methyl]	78-78-4	48542
Methane	74-82-8	3462
Pentane	109-66-0	332415
Propane	74-98-6	33303

Category: Flammable

Scenario: Worst-case

Release Type: Vapor Cloud Explosion

**Estimated** Distance to 1 psi overpressure: .6 miles (1.0 kilometers)

## Terry Clark

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**From:** Heather Yager  
**Sent:** Tuesday, May 18, 2004 1:24 PM  
**To:** Terry Clark  
**Subject:** RE: Risk Management plan info

Terry,

Here are your lat-longs. All have been GPS'd and will be in Datum 1983.

Benedum (31.3375, -101.7652778)  
Midkiff (31.64611111, -101.7697221)  
Chaney Dell (36.433333, -98.233333)  
Chester (36.433333, -98.966666)  
Hiligh/Reno Junction (43.8413889, -105.3622222)  
Newcastle (43.63805556, -104.5566666)  
Kitty (44.31638889, -105.6777777)  
Sand Dunes (43.08555556, ~~-106.9002777~~)  
Granger (41.5398, -109.9556)  
Red Desert (41.6424, -108.2580)  
Lincoln Road (41.4765, -109.4727)  
San Juan (36.7575, -108.3679)

-----Original Message-----

**From:** Terry Clark  
**Sent:** Tuesday, May 18, 2004 11:52 AM  
**To:** Heather Yager  
**Subject:** Risk Management plan info

It is time for us to update our RMP. They ask some mapping questions that I need your assistance with.

For example, if we put in a Lat/Long based on a map, what is the source map scale number? If we use a GPS, or even if we didn't, what is the "Horizontal accuracy" and finally, what is the Horizontal Reference Datum Code? Is it 1927, 1983 or 1984?

I need this information for the following locations pretty soon. If this doesn't make any sense to you, please call me as I the hard copy request and perhaps we can make some sense out of it.

Benedum, Midkiff, Chaney Dell, Chester, Hiligh/Reno Junction, Newcastle, Kitty, Sand Dunes, Granger, Red Desert, Lincoln Road, & San Juan River

## Terry Clark

---

**From:** Kent McEvers  
**Sent:** Tuesday, May 18, 2004 11:47 AM  
**To:** Terry Clark  
**Subject:** RE: Updates on Risk Management Plans

1. Kent McEvers, Area Manager, home.....505-326-4054.....cell..505-860-7208
2. 19 full time and 2 temps.
3. Last inspection unknown. By a safety org. NMOCD did an overall inspection two years ago....count?....Last time would have been internal audit by yours guys.
4. Not sure about this one either. I thought Bob and Don Meadows went thru this. Not sure if Rick has looked at it.
5. We have went through items over the years as required. I cannot say when we have sat down over a period of time and went through this with everyone....we need to.
6. We were always going to sit down with the local fire dept. and never have. Bob has been faithful on the LEPC but not sure if he has shared this with them. I know we have talked about it.

-----Original Message-----

**From:** Terry Clark  
**Sent:** Tuesday, May 18, 2004 11:41 AM  
**To:** Bryant Hazard; Dave Hatfield; Arnie Krush; Bobby Schmitz; Kent McEvers  
**Cc:** Rick Morrish; Don Meadows; Pete Bryant; Rex Specht; Bruce Portz  
**Subject:** Updates on Risk Management Plans

I need some help gathering information on the following plants. While I know some of this, I would prefer having it verified by you or your folks. The due date on this renew is June 21 and obviously, we need to have the information much sooner than that, hopefully by the 2nd or 3rd of June.

The information I need is on the following plants:

Benedum  
Midkiff

Chaney Dell  
Chester

Sand Dunes  
Hillight/Reno Junction  
Kitty  
Newcastle

Lincoln Road  
Red Desert  
Granger

San Juan

Specifically the information I need is:

1. Who is the emergency contact for this facility?  
Name:  
Title:  
Phone number:  
24 hr phone number:
2. The number of full time employees who are attached to the facility. Not the number there on a day to day basis.
3. When was the last outside agency safety inspection?  
who did it? DOT/OSHA/EPA/PSC or someone else
4. When was the Emergency Response plan last updated?
5. When were the employees last trained on the Emergency Response plan?
6. What outside emergency response agency has knowledge about the facilities emergency response plan? Fire department, LEPC or someone else?

**APPENDIX E – EMERGENCY RESPONSE PLAN**

**ANADARKO PETROLEUM CORPORATION  
SOUTHERN REGION EMERGENCY RESPONSE /  
OIL SPILL CONTINGENCY PLAN**

**INTRODUCTION 1**

**INCIDENT LEVELS 2**

**Injury 3**

**SPILLS 4**

**NATURAL GAS RELEASE / H2S 5**

**HAZWOPER 6**

**COMMUNICATION, EVIDENCE & MEDIA 7**

**INCIDENT COMMAND SYSTEM (ICS) 8**

**ICS CONTACT INFORMATION 9**

**FEDERAL AND STATE AGENCIES A**

**AREA SPECIFIC CONTACT INFORMATION**

<b>Kansas</b>	<b>Elkhart/Hougatton</b>
<b>New Mexico</b>	<b>SJ Basin</b>
<b>Texas</b>	<b>Midland</b>
	<b>Mitchell Puckett/Gomez</b>
<b>Texas</b>	<b>Ozona</b>
<b>Texas</b>	<b>McAllen</b>
<b>Texas</b>	<b>Maverick Basin</b>
<b>Texas</b>	<b>Central Chalk</b>
<b>Texas</b>	<b>Woodville</b>
	<b>North Star and Tyler County</b>
<b>Texas</b>	<b>Bossier/Freestone</b>
	<b>Pinnacle/Bethel Plant/Dew</b>
<b>Texas</b>	<b>Carthage and N. Louisiana</b>
	<b>Sarepta</b>



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 1
	Section: Introduction
	Revision: 7/1/2007

## 1.0 PURPOSE & SCOPE

This Emergency Response / Oil Spill Contingency Plan (the "Plan") is designed to help Anadarko Petroleum Corporation ("Anadarko") and its subsidiaries respond quickly and effectively to the problems presented by serious incidents when they do occur. The Plan's primary goal is to help the company mitigate or prevent as far as practical, any injury or loss of life, damage to property, wildlife, or the ecology.

Situations resulting from spills and releases can generate complex technical, legal and public relations problems. It cannot be overemphasized that the best way to handle emergency situations is to prevent their occurrence.

Within this Plan you will find descriptions of the duties that must be accomplished when a serious incident occurs. It provides personnel with procedures for handling such incidents effectively.

### **This Emergency Response / Oil Spill Contingency Plan is designed:**

- |   |
|---|
| • To serve as the basis for an organized action plan in dealing with emergencies and spills of all magnitudes.          |
| • To spell out responsibility, priority and importance in countering an emergency situation or major spill.             |
| • To provide information on the means of handling serious incidents and identify the organizations, which are involved. |
| • To tabulate the personnel and agencies that must be notified.   |

**Prompt action** is mandatory. For this reason, the content of this Plan must be understood by involved Anadarko personnel. All employees involved in responding to an incident should be informed to take quick action to protect life and property and to immediately report the incident.

Although this Plan contains procedures applicable to most foreseeable incidents, actual conditions will dictate whether deviations from the Plan are appropriate.



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 1
	Section: Introduction
	Revision: 7/1/2007

## 1.1 AREAS OF COVERAGE

The manual covers the following areas:

### Exploration & Production

- Texas
- Kansas
- Louisiana
- Oklahoma

### Midstream

- Texas
- Utah (Greater Natural Buttes Area)
- Colorado
- New Mexico
- Kansas
- Arizona
- Oklahoma
- Mississippi

## 1.2 PLAN REVIEW

The plan will require modification from time to time, as personnel change, as technologies advance, and as experience indicates improvements. The plan is to be reviewed semiannually by the EHS staff to assure that it is up to date.

- |   |
|---|
| • Organizational Changes                |
| • Procedure Modifications               |
| • Change in Commodities Transported     |
| • Regulatory Mandates                   |
| • Pipeline Acquisitions or Modification |
| • Leaks / Spills                        |



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	1
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### 1.3 DRILLS

Periodic drills, either tabletop or actual on-site, should be conducted. The drills will improve the emergency response plan through critiques and practice, as well as provide public relations benefits. The impact on a community from an incident can be greatly reduced by having good communication between the company and all of the stakeholders (neighbors, emergency response personnel and local officials, for example).

Following any drill or emergency incident, Anadarko employees and incident command personnel should conduct a critique to determine how the response went, how this manual was used and followed, and if any improvements could be made.

#### The following questions should be answered following any drill or critique:

- |   |   |
|---|---|
| • | Was the emergency response plan implemented in a timely and efficient manner?                         |
| • | Were evacuation alarms activated, escape routes followed and all personnel accounted for?             |
| • | Were the proper authorities and agencies notified in a timely manner?                                 |
| • | Were the proper procedures and checklists followed and were they effective in resolving the incident? |
| • | Was the correct personal protective equipment available and used?                                     |
| • | How could this emergency response plan be changed to increase effectiveness?                          |

All drills should be documented and prepared in a format suggested by the National Preparedness for Response Exercise Program (PREP).



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 1
	Section: Introduction
	Revision: 7/1/2007

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<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 2
	Section: Incident Levels
	Revision: 7/1/2007

## 2.0 INCIDENT LEVELS

In order to properly respond to any emergency, incidents should be classified into one of three levels. The incident level is determined by the complexity of the incident, the risks to company personnel and the public, and the impact on the environment. These level classifications will be used to communicate to all personnel within the company.

### 2.1 LEVEL 1 (Lowest Level)

Level 1 is an incident which can be effectively managed within the Region without activating the Emergency Response Team. Notification to department Manager/Director is determined by the nature of the incident.

	<ul style="list-style-type: none"><li>• An incident without recordable injuries, public involvement or adverse media involvement.</li></ul>
	<ul style="list-style-type: none"><li>• Oil spills to water equal to or less than one (1) barrel.</li></ul>
	<ul style="list-style-type: none"><li>• An incidental release of a substance which can be absorbed, neutralized, or otherwise controlled at the time of a release by employees in the immediate area and that does not pose a potential safety or health hazard or threat to the environment and is not immediately reportable to any government agency.</li></ul>
	<ul style="list-style-type: none"><li>• Fires immediately controlled and extinguished.</li></ul>



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 2
	Section: Incident Levels
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## 2.2 LEVEL 2 (Intermediate Level)

Level 2 is an incident which requires notification to the Operations Manager. Corporate notification is determined by the nature of the incident. Activate Emergency Response Teams as appropriate.

	<ul style="list-style-type: none"><li>• Incidents involving recordable or serious injury to employees, dependents, contractors, or the public as a result of Company activities.</li></ul>
	<ul style="list-style-type: none"><li>• Any other incident or situation which may create a serious risk to life, property, or the environment.</li></ul>
	<ul style="list-style-type: none"><li>• Oil spills to water greater than one (1) barrel, releases, explosions, or other incidents that are required to be <b>immediately</b> reported to any government agency.</li></ul>
	<ul style="list-style-type: none"><li>• Fires not immediately controlled and extinguished.</li></ul>
	<ul style="list-style-type: none"><li>• Incidents that may expose Anadarko to significant liability whether employees are involved or not (e.g. vehicle accident).</li></ul>
	<ul style="list-style-type: none"><li>• Incidents that affect others which are a concern for the Company (e.g. facility incidents involving other operators).</li></ul>
	<ul style="list-style-type: none"><li>• Natural Disasters or severe weather events.</li></ul>



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 2
	Section: Incident Levels
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### **2.3 LEVEL 3 (Highest Level)**

**A Level 3 incident requires notification to all levels of region management. Notification process to corporate groups should follow chain of command. Emergency Response Teams may be activated depending on nature of the incident.**

•	Death or injury to any person which has a substantial risk of permanent disability or impairment.
•	Spills, releases or other incidents that impact environmentally sensitive areas, cause closure or rerouting of public roads or affect the public health.
•	Blowouts.
•	Fires not immediately controlled and extinguished with injury or significant property damage.
•	Any event that affects the public, or is likely to attract adverse media coverage.
•	Incidents that could significantly impact Anadarko cash flow and/or financial performance.



**Southern Region**

Emergency Response /  
Oil Spill Contingency Plan

Section No.:	2
Section:	Incident Levels
Revision:	7/1/2007

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<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 3
	Section: Injury
	Revision: 7/1/2007

The first aid and emergency procedures detailed below could be life saving. Become familiar with the information described below, so that disasters can be rapidly contained. It is the responsibility of the injured personnel to report bodily injury, chemical exposure(s) or property damage. Use latex gloves (or some equivalent if you have a latex allergy) before giving first aid. **Always** wash your hands before (if possible) and after giving first aid to avoid the risk of infection and transmission of disease.

### 3.0 NOTIFICATION INSTRUCTIONS

<b>First Responder</b>	The employee at the scene who is most qualified to do so will render first aid or assistance and assign personnel to call emergency services and notify the Foreman / Superintendent.
<b>Foreman / Superintendent</b>	The Foreman / Superintendent will obtain details of the incident, assure that emergency services have been called, notify the Area Manager / Next Level Supervisor and Safety Analyst and direct further on-site activities.
<b>Area Manager / Next Level Supervisor</b>	The Area Manager / Next Level Supervisor will notify the Region Manager and Incident Commander.
<b>Safety Analyst</b>	The Safety Analyst will:
	<b>A</b> Notify appropriate regulatory agencies and EHS Manager.
	<b>B</b> Complete the appropriate incident reports.
<b>Incident Commander or designee</b>	<b>C</b> Conduct necessary incident investigation.
	The Incident Commander or designee will notify the appropriate personnel and will determine if the Emergency Response Room is to be activated and what Emergency Response Team (ERT) members should be notified.
<b>NOTE</b>	All injuries / illnesses should be reported to the Safety Analyst immediately.



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 3
	Section: Injury
	Revision: 7/1/2007

### 3.1 NOTIFICATION GUIDELINES

Notification to each level should include the following:

<b>A</b>	Date & time of incident
<b>B</b>	Location of incident (with directions to the site)
<b>C</b>	Description of incident and nature of injuries
<b>D</b>	Location where injured employee was moved
<b>E</b>	Identity of emergency services present at the site
<b>F</b>	Other considerations (e.g., media attention, regulatory agencies at site, etc.)

### 3.2 ANADARKO 24-HOUR REPORTING SYSTEM

Several offices have an after-hour answering service available in the event of an emergency situation. The answering service will page the person listed on their on-call list. This reporting system will ensure that the appropriate resources are available & utilized.


**NOTE:** IF ANY INJURY / ILLNESS FALLS UNDER THE "REPORT IMMEDIATELY" GUIDELINES, IT IS UNACCEPTABLE TO LEAVE A MESSAGE ONLY – ALWAYS CONTINUE TO CALL THROUGH THE CHAIN OF COMMAND UNTIL A PERSON IS REACHED.



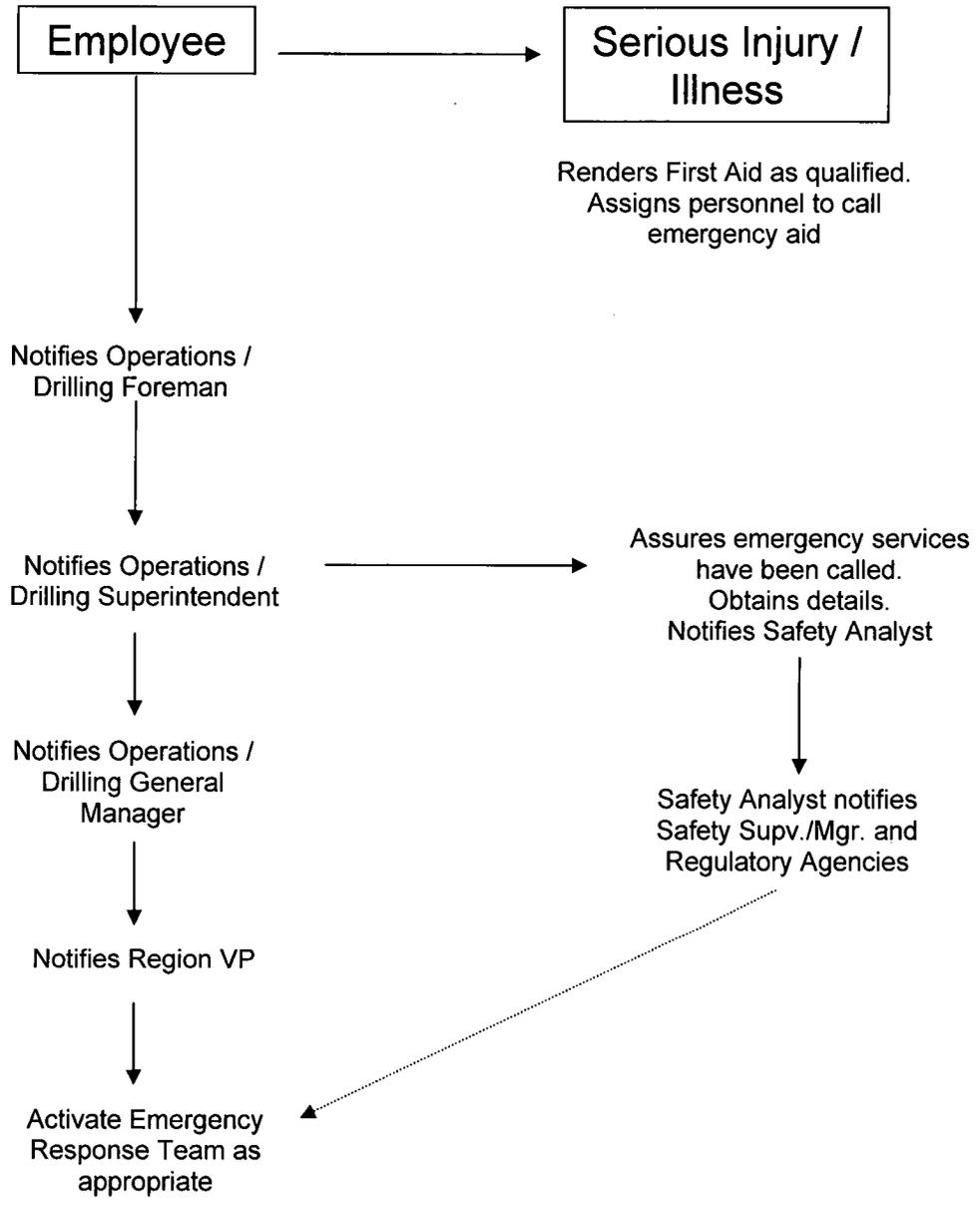
<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 3
	Section: Injury
	Revision: 7/1/2007

### 3.3 INJURY LEVELS

<b>Very Serious Injury</b>	Patient is unconscious and/or shock and/or bleeding seriously. <b>Call 911</b>
<b>Serious Injury</b>	Patient is in need of skilled medical assistance, but is able to walk. Treat on-site as practical and transport to emergency center or call 911.
<b>Minor Injury</b>	Person sustains minor cut, bruise, etc. First aid treatment using first-aid kit.

<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 3
	Section: Injury
	Revision: 7/1/2007

**Notification Flowchart** Figure 3-0





## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	4
Section:	Spills
Revision:	7/1/2007

#### 4.0 SPILL & RELEASE DETECTION

The appropriate Anadarko field personnel are to conduct visual observations and routine inspections of locations and equipment to ensure proper operation of all facilities.

In the event of a spill or release at a facility, prompt response and reporting is required. Failure to immediately report and respond to a spill or release can increase the environmental damage and subject Anadarko to fines and enforcement actions.

Have relevant information available before starting notification. This does not mean a complete report of everything, but as a minimum the following:

- A. Date and time of incident.
- B. Type and estimated total quantity of material released.
- C. Source and cause of the release.
- D. Description of all affected media and assessment of environmental conditions such as precipitation, wind speed and direction, and temperature.
- E. Estimated spill destination and local topography including waterways that could potentially be threatened.
- F. Assessment of immediate danger to human life or health or to the environment, including outside the facility, and extent of damages or injuries, if any.
- G. Actions being used to stop, remove and mitigate the effects of the release.

#### 4.1 INITIAL RESPONSE

##### ENSURE SAFETY OF CITIZENS & RESPONSE PERSONNEL

- Identify hazard(s) of spilled material.
- Establish site control (hot zone, warm zone, cold zone, and security).
- Consider evacuations, as needed.
- Establish transportation restrictions.
- Monitor air in impacted areas.
- Develop site safety and health plan for response personnel.
- Ensure safety briefings are conducted.
- Refer to Material Safety Data Sheets for spilled product elements & procedures.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.: 4

Section: Spills

Revision: 7/1/2007

#### STOP THE LEAK (IF POSSIBLE & SAFE)

- Complete emergency shutdown.
- Initiate temporary repairs.
- Transfer product if possible.

#### NOTIFY ANADARKO CHAIN OF COMMAND

- Refer to the Section 2 for reporting level.
- Notify Incident Commander as needed.
- Incident Commander will assemble Emergency Response Team as needed.

#### SHUT OFF ALL IGNITION SOURCES

- No smoking at or around spill site.
- No open flames or portable lighting.
- No hot work unless approved by Safety Officer.

#### CONTAIN THE SPILL

- Deploy oil containment boom or other containment measures at the spill source and appropriate collection areas.
- Conduct recovery operations.
- Develop disposal plan.

#### NOTIFY SPILL RESPONSE CONTRACTORS

- Notify response company for equipment and manpower as needed.

#### ESTIMATE SPILL VOLUME

- Retrieve detailed information regarding the release (daily production, duration of release, etc.).
- Survey spill site for dimensions of spill.

#### NOTIFY AGENCIES OF SPILL SIZE

- Estimate volume of release.
- Use Agency Notification List to determine required agency notifications.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	4
Section:	Spills
Revision:	7/1/2007

#### NOTIFY AGENCIES IF FLUID ENTERS A WATER SOURCE

- Verify release impacted navigable waters.
- Use Agency Notification List to determine required agency notifications.

#### 4.2 FOREMAN / SUPERINTENDENT RESPONSE ACTIONS

The Foreman / Superintendent will:

- A** Mobilize material, equipment, and manpower to stop, contain, and clean up the spill.
- B** Report spill to the Area Manager / Next Level Supervisor and the Environmental Specialist.
- C** Notify appropriate regulatory agencies and EHS Manager/Director
- D** Complete Form 416 and submit to EHS Analyst

#### 4.3 ENVIRONMENTAL SPECIALIST RESPONSE ACTIONS

The Environmental Analyst will:

- A** Notify appropriate regulatory agencies and EHS Manager/Director.
- B** Complete the appropriate incident reports.
- C** Act as Clean-Up Supervisor

#### 4.4 AREA SUPERINTENDENT / NEXT LEVEL SUPERVISOR

If necessary, and based on the magnitude and impacts of the spill, the Area Superintendent will notify the appropriate Operations Manager.

#### 4.5 OPERATIONS MANAGER

The Operations Manager will notify the appropriate Region Vice President and will determine if the Emergency Response Room is to be activated and what Emergency Response Team (ERT) members should be notified.



Southern Region	
Emergency Response / Oil Spill Contingency Plan	Section No.: 4
	Section: Spills
	Revision: 7/1/2007

#### 4.6 QUALIFIED INDIVIDUAL AND EMERGENCY MANAGEMENT TEAM NOTIFICATIONS

##### Reporting Procedures

Anadarko employees, contractors, and subcontractors are responsible for maintaining a vigilant watch for oil spill discharges of any magnitude from Anadarko facilities and operations. The **APC Form 416 (Report a Release)** and **APC Form 416s (Supplemental Information)** must be completed (example follows).

##### *External Notifications (All spills to water or threatens water)*

Personnel reporting a spill, releases of hazardous substances of any size, or any type of emergency incident at an Anadarko facility will follow the reporting procedures listed below:

EHS personnel are responsible for reporting a spill to water, threatens water or a volume above any regulatory threshold to the following regulatory agencies immediately:

- 1) National Response Center
- 2) EPA (Spills related to NPDES discharge point)
- 3) Appropriate State & Local Regulatory Agencies

##### *Internal Notifications (All spills greater than 1 barrel or any spill to water)*

Personnel reporting a spill of greater than one (1) barrel are responsible for notifying both of the departments listed below:

- 1) EHS Department (verbal and written spill report)
- 2) Appropriate Production, Drilling or Midstream Department

After notification, EHS Department personnel will provide follow-up activities listed below:

- 1) Confirm notification by Field Personnel and complete additional notifications;
- 2) Provide subsequent written notifications required; and
- 3) Conduct an incident investigation and recommend improvements as needed.



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 4
	Section: Spills
	Revision: 7/1/2007

#### **4.7 SPILL RESPONSE AND CLEANUP**

Company personnel and contractors are equipped and trained to respond to certain “minor spills”. Minor spills can generally be described as those where the quantity of product spilled is small, the material can be easily controlled, the spill is localized, and the product is not likely to seep into groundwater or reach surface water or adjoining shorelines. Procedures for responding to these releases are covered in the facility’s SPCC Plan.

Spill response equipment and materials are maintained for each production area. These materials are stored either at the facility or supplied by contractors identified in the Appendixes and are available for use by Company Emergency Response Personnel and Emergency Response Contractors. A list of company owned spill response material is included in the Appendixes.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.: 4
Section: Spills
Revision: 7/1/2007

APC 416 (05/07)

Assessment:

- Reportable (Deviation)  
 Non-Reportable (Non-Deviation)



NRC #

APC #

APC 416s completed

## Report a Release

<input type="checkbox"/> Spill <input type="checkbox"/> Excess Emission																																																																							
Reception Criteria	Facility _____ Qtr/Qtr _____ Section _____ Township _____ Range _____ API# _____ County _____ State _____ Field _____ Office _____ Describe Source of Release and Migration of Discharge _____																																																																						
Assignment Details	Assignee (goes on their dashboard) _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Discovered</th> <th colspan="2">Approximate Released Date/Time</th> <th colspan="2">Controlled</th> </tr> <tr> <td>Date</td><td>Time</td> <td>Date</td><td>Time</td> <td>Date</td><td>Time</td> </tr> </table> Describe Probable Cause of Release _____ Describe Actions to Control Release _____	Discovered		Approximate Released Date/Time		Controlled		Date	Time	Date	Time	Date	Time																																																										
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Agency Contacted	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Agency Contacted</th> <th>Phone Number</th> <th>Contact</th> <th>Date / Time</th> <th>Reference #</th> <th>Who made call</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> Remarks _____	Agency Contacted	Phone Number	Contact	Date / Time	Reference #	Who made call																																																																
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Source Pipeline Info	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Source</th> <th>Pipeline Info</th> <th>From</th> <th>To</th> </tr> <tr> <td>Diameter</td> <td>in</td> <td>Construction</td> <td>Throughput</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>bbbl/day</td> </tr> </table>	Source	Pipeline Info	From	To	Diameter	in	Construction	Throughput				bbbl/day																																																										
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Spill / Excess Emission	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Material Released</th> <th>Qty Released</th> <th>Qty Into Waterway</th> <th>Qty Recovered</th> <th>Amt Flared</th> <th>scf</th> <th>Amt Vented</th> <th>scf</th> </tr> <tr> <td><input type="checkbox"/> Produced Water</td> <td>bbbl</td> <td>bbbl</td> <td>bbbl</td> <td>Supp Gas Amt</td> <td>scf</td> <td>Supp Gas Heat Content</td> <td>BTU/scf</td> </tr> <tr> <td><input type="checkbox"/> Condensate</td> <td>bbbl</td> <td>bbbl</td> <td>bbbl</td> <td colspan="2">Expected to last more than 24 hours</td> <td colspan="2"><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td><input type="checkbox"/> Crude Oil</td> <td>bbbl</td> <td>bbbl</td> <td>bbbl</td> <td colspan="4"> </td> </tr> <tr> <td><input type="checkbox"/> Chemical</td> <td>bbbl</td> <td>bbbl</td> <td>bbbl</td> <td colspan="4"> </td> </tr> </table>	Material Released	Qty Released	Qty Into Waterway	Qty Recovered	Amt Flared	scf	Amt Vented	scf	<input type="checkbox"/> Produced Water	bbbl	bbbl	bbbl	Supp Gas Amt	scf	Supp Gas Heat Content	BTU/scf	<input type="checkbox"/> Condensate	bbbl	bbbl	bbbl	Expected to last more than 24 hours		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Crude Oil	bbbl	bbbl	bbbl					<input type="checkbox"/> Chemical	bbbl	bbbl	bbbl																																		
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**Southern Region**

**Emergency Response /  
Oil Spill Contingency Plan**

Section No.: 4  
Section: Spills  
Revision: 7/1/2007

APC 416a (05/07)

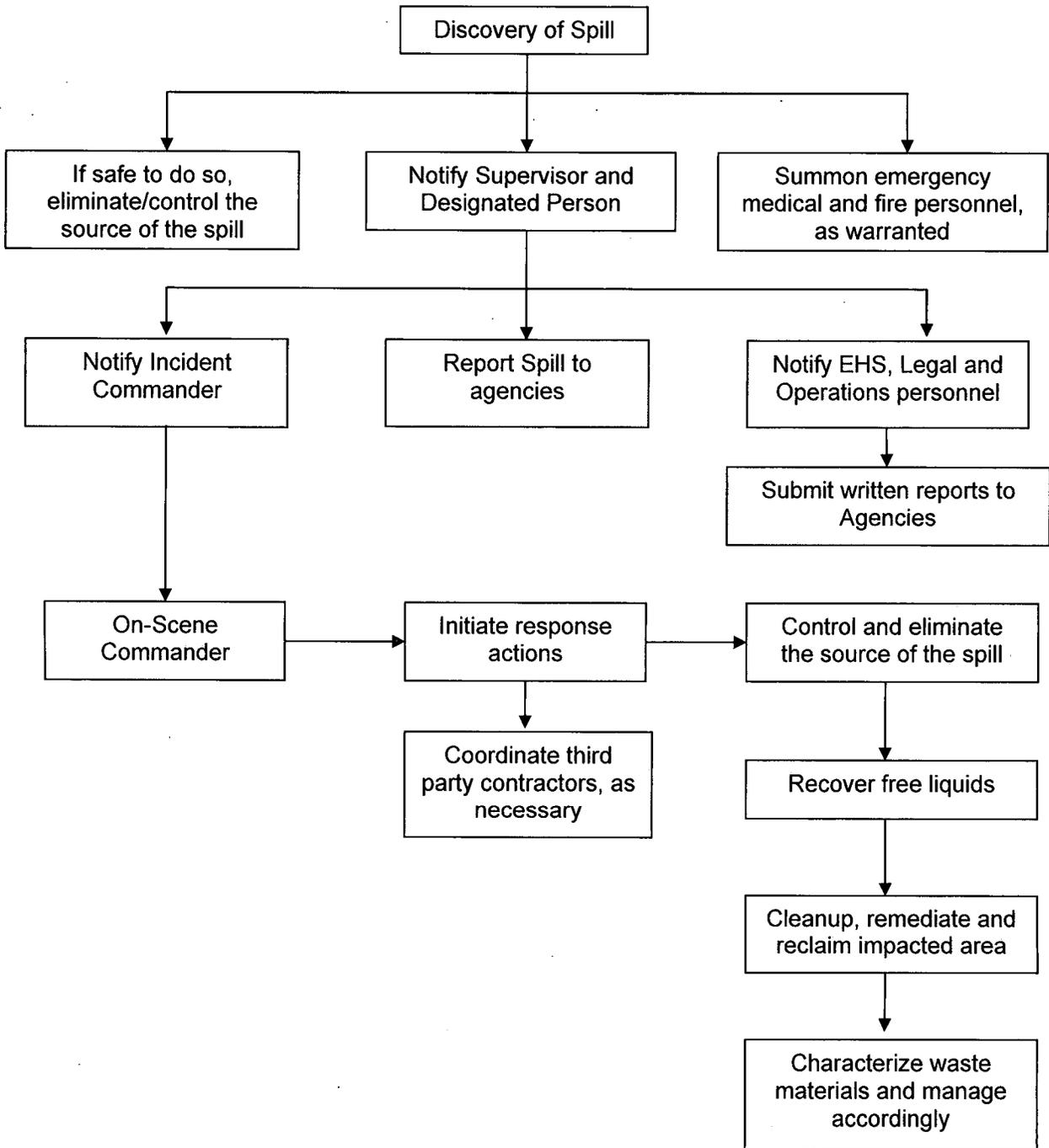


APC # \_\_\_\_\_

**Report a Release (Supplemental Information)**

<small>Task - Captain</small> <small>Task - Vessel</small> <small>Task - Agent</small> <small>Task - Remarks</small>	Captain		Address of Captain	
			Phone number	
			Card Number	
	Name of Vessel		Call Sign	
	Agent		Flag	
	Remarks			
<small>Task - Material Analyzed</small> <small>Task - Materials Reference Information</small> <small>Task - Permit ID, Issuing Agency, Issue Date</small> <small>Task - Agency, Fine Amount, Fine, Date</small> <small>Task - All other individuals that may have information</small>	Material Analyzed (include locations / time, individual, lab name)			
	Materials Reference Information			
	Permit ID, Issuing Agency, Issue Date			
	Agency, Fine Amount, Fine, Date			
	All other individuals that may have information			
<b>Signature</b>				
	Statements	<input type="checkbox"/> Yes <input type="checkbox"/> No		
	Suspected responsible party		Phone number	
<small>Task - Remediation</small> <small>Task - Agency</small> <small>Task - Agent on Site</small> <small>Task - When?</small>	All soil containing over 1% TPH was brought to surface for remediation or disposal:		<input type="checkbox"/> Yes <input type="checkbox"/> No	If no, explain:
	All soil containing over 5% TPH has been:		Remediation of soil down to 1% or less TPH will be accomplished by:	
	Properly mixed in place to 5% or less by weight TPH	<input type="checkbox"/> Yes <input type="checkbox"/> No	Removal from spill site	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Removed to an approved disposal site	<input type="checkbox"/> Yes <input type="checkbox"/> No	On-site natural bioremediation	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Contained in a secure interim storage location	<input type="checkbox"/> Yes <input type="checkbox"/> No	On-site enhanced bioremediation	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Not Applicable (no soil over 5 percent TPH involved)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Other on-site remediation	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Estimated date for completion of soil cleanup to 1% by weight TPH:			
Agency				
Agent on Site				
When?				

**Spill Response Flowchart** Figure 4-0





<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 4
	Section: Spills
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<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 5
	Section: Natural Gas Release / H <sub>2</sub> S
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Every incident of unexpected gas release shall be reported to the next level of supervision immediately. All information regarding the release should be relayed for use during agency reporting. The next level of supervision will then report to local, state and federal agencies as outlined in this plan.

## **5.0 INCIDENT PRIORITIES**

The first priority of action for all incidents involving natural gas will be directed toward life & safety first followed by property. Immediate care shall be given to any injured personnel. The surrounding area will be evacuated to reduce risk of additional casualties.

### **5.1 PIPELINE FACILITY INCIDENT**

#### **PIPELINE FACILITY INCIDENT**

- Identify the facility and the source of danger.
- Call the fire department.
- Notify the pipeline company.
- Notify chain of command.

### **5.2 BLOWOUT AT PRODUCING WELL**

#### **BLOWOUT AT PRODUCING WELL**

- Call the fire department.
- Notify chain of command.
- Identify the source of leakage above or below the master valve.
- Shut off / isolate the auxiliary equipment if possible.
- Wait for further orders from the Incident Commander.



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### **5.3 SAFETY OF CITIZENS / RESPONSE PERSONNEL**

#### **ENSURE SAFETY OF CITIZENS & RESPONSE PERSONNEL**

- Evacuate premises (proceed upwind from source).
- Assess situation.
- Eliminate sources of ignition.
- Operate valves to stop flow of gas (if it can be done safely).
- Report release to the next level of supervision.
- Notify police and fire departments if necessary.
- Notify receiving pipeline companies.
- Repair leak location as soon as possible.

### **5.4 SITE SPECIFIC NATURAL GAS RELEASE INFORMATION**

Check individual areas plans for natural gas release procedures related to those specific areas. Also see Appendixes for area specific evacuation plans.

### **5.5 H<sub>2</sub>S Contingency Plan**

#### **Scope**

The purpose of this Section is to provide an organized plan of action to protect the general public and employees in the event of an accidental release of a potentially hazardous volume of hydrogen sulfide (H<sub>2</sub>S), or other toxic/hazardous gas.

#### **Responding to Leaks and Containing H<sub>2</sub>S**

1. A leak may be detected and/or reported by various individuals (i.e., the public, Anadarko personnel, public safety officials etc.).



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	5
Section:	Natural Gas Release / H <sub>2</sub> S
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2. Once a leak has been determined to be from Anadarko's facilities, the following information shall be obtained and relayed to the Superintendent/Designee:
  - a. Type of leak.
  - b. Personal injuries.
  - c. Location and magnitude of leak.
  - d. Direction and velocity of the wind.
  - e. Residents, businesses, and highways located downwind of the leak.
  - f. Your action and/or advice concerning evacuation of nearby residents and businesses and/or establishing roadblocks.
  - g. Action being taken to alleviate the situation.
  - h. Time emergency occurred, or was reported.
  - i. Estimate of damage to date and potential future damage.
3. The Superintendent or designee will be in charge of the actual on-site operations.
4. Superintendent/designee will assign someone to monitor company radio frequency. Carry a 2-way, or bring a company truck with a radio as close as possible and maintain communications with response personnel.
5. The ranking Anadarko employee will be in charge of all actions until the Superintendent or designee arrives. Protective equipment should be used as appropriate.
6. Operating personnel will attempt to determine seriousness of situation, and
  - a. Notify immediately other personnel in area.
  - b. Gather all personnel, customers and visitors at the rendezvous point, depending on release location.
  - c. Recall employees if the emergency happens off-hours. (Numbers listed in Appendixes)
  - d. Contact Houston personnel.
  - e. Maintain a log of all contacts with residents, regulatory and law enforcement agencies, other operators, etc.
  - f. Determine whether assistance is needed from public safety officials.
7. Operating personnel should attempt (from a safe area) to block in leak and be alert for chemical and/or liquid hydrocarbon run-off. If chemicals are involved in a fire, think of the consequences before you use water on the fire. It may be better to contain the fire and let the chemicals incinerate. Close off the area. If you do not have the necessary equipment, heavy equipment operators are listed in the Contractor Services listing in the Appendixes.



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8. If injuries have been sustained, start first aid procedures and call for ambulance service if needed, organize search and rescue if anyone is still unaccounted for.
9. If gas escape cannot be safely shut-in, stopped, etc., and presents hazard to residents, personnel or property, the following steps should be taken:
  - a. Determine if the sour gas being released should be ignited to protect residents.
  - b. Initiate Evacuation Procedure.

### Evacuation Procedure

1. Review with personnel on scene what measures are being taken for evacuation and the urgency for immediate action.
2. Alert necessary personnel to activate all, or a portion of the Sections of this Plan.

#### FACILITY

Superintendent  
Operations Foreman  
Foreman  
Contract Help

#### HOUSTON

Vice President  
Operations Manager  
EHS Analyst

#### Teams for:

Notifying residents and school bus system  
Evacuating Residents  
Establishing and manning roadblocks

#### Persons to:

Man briefing area  
Man safe area  
Monitor H<sub>2</sub>S concentrations (if gas is sour)  
Maintain log of events and action taken

3. Locate area of release on map which shows location of lines, roads, dwelling, etc.
4. Determine best estimate of:
  - a. Volume being released.
  - b. H<sub>2</sub>S concentration.
  - c. Wind velocity and direction.
  - d. Future volumes and H<sub>2</sub>S concentrations.



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5. Identify residents that should be notified and/or evacuated immediately.
6. Instruct resident notification team to make necessary contacts.
7. Advise the evacuation team of those residents that could not be contacted via telephone, or those that will need assistance.
8. Stay in contact with resident notification and evacuation teams as to whom has been notified, evacuated, etc., making sure a log, of those contacted, is maintained.

**Response Teams, Members, and Duties**

**H<sub>2</sub>S MONITORING/CLIMATIC CONDITIONS TEAM** – Responsible for monitoring ambient air concentrations or hazardous gases near a leak area, calculating H<sub>2</sub>S radius of exposure, and monitoring climatic conditions (wind direction, wind velocity, etc.). The team coordinator will keep the Communications Team advised of the monitoring results and any changes that occur.

**ROAD BARRICADE** – Responsible for establishing roadblocks in areas affected by a potentially hazardous leak. Team members may be assisted by the Sheriff's Department and/or Department of Public Safety.

**PUBLIC RELATIONS, COMMUNICATIONS, AND DOCUMENTATION TEAM** – Responsible for coordinating teams, communications between team members, and coordinating duties of public safety officials. The team will document record of events, the safety and control measures taken during the incident. The Coordinator of this team will keep the Superintendent up to date on leak events relating to public relations with the news media, public, and various public safety/fire officers. Safe areas will be established as appropriate.

**EVACUATION TEAM (FIELD)** – Team members will be responsible for notifying and evacuating residents from a hazardous area to a place of safety.



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**Health Effects of Hydrogen Sulfide\*** Table 5.0

<u>Concentration</u>		<u>Physical Effects</u>
<u>Percent (%)</u>	<u>PPM</u>	
0.0002	2	Odor Threshold.
0.001	10	Obvious and unpleasant odor. Beginning eye irritation. Safe for 8 hours exposure.
0.005	50	Inflammation, corneal blistering, sense of smell decreases, headache, cough, and nausea.
0.01	100	IDLH (Immediately Dangerous to life or health). Kills sense of smell in 3 to 15 minutes; may sting eyes and throat. Drowsiness after 15 to 20 minutes.
0.02	200	Kills sense of smell rapidly; stings eyes and throat.
0.05	500	Dizziness; breathing ceases in a few minutes; needs prompt artificial respiration.
0.07	700	Unconscious quickly; death will result if not rescued properly.
0.10	1000	Unconscious at once, followed by death within minutes

\* REMEMBER: 1% = 10,000 Parts per Million (PPM)



Southern Region	
Emergency Response / Oil Spill Contingency Plan	Section No.: 6
	Section: HAZWOPER
	Revision: 7/1/2007

HAZWOPER stands for "Hazardous Waste Operations and Emergency Response". HAZWOPER is a regulation designed to establish a management plan for emergencies involving hazardous materials. It is applicable to oil field operations primarily through the regulations addressing emergency responses to hazardous substance releases.

HAZWOPER defines an emergency response, or responding to emergencies, as a response effort by employees from outside the immediate release area or by other designated responders (e.g., local fire departments, mutual-aid groups, designated HAZMAT Team, etc.) to an occurrence which results or potentially results in an uncontrolled release of a hazardous substance.

For the purposes of this plan, the term "immediate release area" has been defined as encompassing the Superintendent's geographical area; therefore, if an emergency situation can be mitigated by Anadarko Company personnel, it is not a HAZWOPER Emergency. In the event that an uncontrolled release requires the response of specially trained emergency teams to stop or control the release (e.g. Fire Department, Department of Health Services, etc.), it is a HAZWOPER response and the procedures in this section of the "Emergency Management Plan" must be followed.

## 6.0 HAZWOPER Plan Narrative

### A. Preplanning Response Actions

Preplanning is the key to a successful emergency management plan. Planning is handled through the training of company employees, formulation of emergency response activities, and pre-planned coordination with outside emergency responders. The following items constitute Anadarko's preplanning actions.

All field employees will be trained in Hazard Communication and Emergency Response. This includes hazardous material container labeling, access to, and understanding Material Safety Data sheets, and responding to emergencies involving hazardous materials. Specific emergency scenarios and appropriate responses will be discussed in these training sessions. All field employees will receive training to a minimum of "First Responder Operations Level", as defined by HAZWOPER.

In the event of a HAZWOPER emergency, response activities will be coordinated with contract companies trained to respond to HAZWOPER. The names of these companies and their emergency numbers can be found in the Area Specific Contact Information found in the appendices.



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 6
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**B. Personnel Roles and Lines of Authority**

If an incident is classified as a HAZWOPER response, the Superintendent/ Drilling Foreman responsible for the facility requiring the response shall supervise Anadarko personnel in emergency response activities and perform all reporting requirements pursuant to this Emergency Management Plan. He/she will continue to perform these duties until such time as the responding Emergency Response Team arrives.

Upon the arrival of the trained Emergency Response Team, the ranking official of said team will be designated as the On-Site Incident Commander. After that point, all emergency response activities will be conducted under the direction of the On-Site Incident Commander.

HAZWOPER (Hazardous Waste Operations and Emergency Response) regulations, under the Occupational Safety and Health Administration, cover employees who respond to certain types of emergencies. In order to meet HAZWOPER requirements, the following levels of training are required:	
Level 1	<b>FIRST RESPONDER (AWARENESS LEVEL):</b> A person who witnesses or discovers a release of hazardous material must be trained in how to notify the proper authorities. This level requires training on the Anadarko emergency response manual.
Level 2	<b>FIRST RESPONDER (OPERATIONS LEVEL):</b> A person who responds to releases of hazardous material defensively, without physically trying to approach the point of release. Examples would be shutting isolation valves remote from the release, building dams to divert liquid releases or barricades an area to prevent exposure to the release. This level requires 8 hours of training on items such as personal protective equipment, hazard communication, Anadarko emergency response plan and how to perform basic control and containment operations.
Levels 3 and 4	<b>HAZMAT TECHNICIAN (Level 3) / HAZMAT SPECIALIST (Level 4):</b> These levels require specific training in how to respond aggressively to a release. Anadarko policy is to only react defensively and allow specially trained outside personnel to perform these functions. These levels require at least 24 hours of specific training.
Level 5	<b>ON-SITE INCIDENT COMMANDER:</b> The duties of an on-site incident commander are to assume control of a situation and coordinate all response to the incident (see Section 8 for more specific duties). An on-site incident commander requires at least 24 hours of operations level training, as well as specific training on on-site incident commander duties.



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**C. Evacuation, Safe Distances, and Places of Refuge**

**Evacuation** - The open air nature of oil and gas operations generally permits numerous safe evacuation routes. In areas where this is not the case, employees are directed to attempt escape along a route that takes them upwind of an incident. Crosswind escape is suggested only until upwind escape is appropriate. Wind direction indicators are installed on all properties that contain H<sub>2</sub>S gas. Anadarko's H<sub>2</sub>S training program addresses escape routes and their relationship to wind direction.

**Safe Distances** - Prior to the arrival of the On-Site Incident Commander mentioned in Section B, the Superintendent/Drilling Foreman or designee shall be responsible for establishing the distance from the hazardous scene. After the On-Site Incident Commander arrives on the scene, safe distances will be established at his/her discretion.

**Places of Refuge** should be established as appropriate for Anadarko operations.

**D. Employee Safety During a HAZWOPER Response**

All field employees will be trained to a minimum of "First Responder Operations Level". This training insures that the employee can operate certain equipment on the property during an emergency in order to bring the emergency condition under control. In the course of these operations the employee may be exposed to a hazardous environment, become injured, or have his/her clothing become contaminated with a hazardous material. The following items will address these issues.

**Personal Protection Equipment** (PPE) is available to every employee. The type of equipment available to the employee will vary depending on the hazards inherent in the subject work area. Selection, safe use, limitations, maintenance, care and storage will be thoroughly covered in employee training. The Company's policies and procedures pertaining to PPE are found in the Safety Manual located in each area office. Employee training will include provisions for initial and periodic refresher training.

**Emergency Medical Services** will be provided by local hospitals, urgent care centers, and fire departments. Services have been identified in the Area Specific Contact Information found in the appendices.



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Emergency Response / Oil Spill Contingency Plan	Section No.: 6
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**Decontamination** of clothing/equipment will be coordinated with Anadarko's Environmental Health & Safety staff. The MSDS will be consulted for proper disposal of contaminated items.

**E. Response Evaluation & Follow-Up**

An Emergency Response Review Committee has been established for the management and review of Anadarko's emergency responses. After a HAZWOPER response has occurred, the Emergency Response Review committee will submit a report to management discussing the emergency response. A copy of this report will be kept in the files.

The Emergency Response Review Committee includes:

- Operations Manager
- Environmental, Health & Safety Manager
- Environmental or Safety Specialist
- Superintendent
- Operations Foreman

The report will identify:

- Nature and Cause of emergency
- Statistics pertaining to emergency (i.e. damage, injuries, etc.)
- Effectiveness of Company Emergency Response Personnel
- Corrective Measures taken to prevent recurrence of similar emergency at this location (considering applicability to other locations)

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## 7.0 GENERAL

It is important when an emergency is identified that the notification hierarchy listed in Sections 9 and the Appendixes are followed. It is mandatory that notices be given internally as soon as practical.

The first person to identify the emergency will report it to his/her supervisor. If a person's supervisor cannot be immediately reached with the known contact (i.e., telephone numbers of home, office, portable phone, or pager) then the next person on the list must be notified. Each person receiving notification is responsible for contacting up the chain of command.

## 7.1 COMMUNICATION TECHNIQUES

<b>1</b>	Communication must be through a two-way confirmed means. Use of messages on a voice recorder or answering machine does not constitute notification. A message may be left, but the next person up the chain of command must be contacted.
<b>2</b>	If a line is busy, advise the operator that you have an emergency and get the operator to interrupt the line.
<b>3</b>	Make sure the person you are communicating with understands you. This can be done by asking them to repeat key parts of your discussion.
<b>4</b>	If you are calling someone you do not frequently talk to, make sure you identify yourself and where you can be reached.
<b>5</b>	If working with a radio communication, call out the person or call sign you want to talk to followed by your call sign (Example: "Station 6, this is home base"). Wait long enough for a response. The person may be away from the radio and may need some time to get back
<b>6</b>	If calling by telephone, let the phone ring at least six times before hanging up.
<b>7</b>	Do not hesitate to call above your supervisor if your supervisor is unreachable.
<b>8</b>	Have relevant information available before starting notification. This does not mean a complete report of everything, but at a minimum the following (See <b>Initial Verbal Media Response</b> as follows):



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## **7.2 COMMUNICATION EQUIPMENT**

The primary means of communications will be by telephone and radio.

Field operations that are Anadarko-operated will utilize two-way radio communications and/or mobile telephones. Communications are designed to allow supervisors to be in contact with the Region office.

Drilling and Workover rigs are usually equipped with either radio systems that communicate with the drilling contractor or mobile telephones. All drilling locations will have some means of two-way communications either onsite or within a 15-minute drive (all types of weather).

## **7.3 EMERGENCY RESPONSE ROOM**

Depending on the nature and severity of the incident, a local command center may be established, usually at the closest office or facility with telephone and radio communication. For major incidents, the Emergency Response Room, located at Anadarko's Houston office, will be activated, as necessary.

## **7.4 PRESERVING THE EVIDENCE**

In the aftermath of a serious incident, it becomes necessary to investigate the incident in order to determine cause and corrective actions. Perhaps the most important aspect of this investigation is determining the facts, and as such, the preservation of the evidence is of great importance.

With the assistance of personnel involved at the incident scene, the evidence can be preserved and a more beneficial investigation performed. The following are basic guidelines which should be followed:

1. Secure the Area

Rope off or other control access into the incident site. Access by non-company personnel allowed only after management approval. The only exception being necessary access by emergency medical rescuers and firefighters.



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2. Preserve the Evidence

As much as possible, don't disturb objects relating to the incident. If unavoidable, stake or mark its location and record what was there. Never allow evidence to leave the scene without approval.

3. Document the Evidence

The Site Supervisor is responsible for preserving all documentation until the investigator(s) arrive at the scene.

4. Identify Witnesses

If persons who witnessed the incident cannot remain on the scene to be interviewed during the investigation, get their names and pertinent information so that they can be located later.

## 7.5 INCIDENT INVESTIGATION

An informal investigation will be conducted on incidents that are considered minor, such as a First Aid only injury, a spill that does not need to be reported to an agency, or a fire with no significant property damage or injury. A formal investigation will occur on more severe incidents. See the Process Safety Management Program Incident Investigation manual for more details. A thorough accident investigation may identify previously overlooked physical, environmental, or process hazards, the need for new or more extensive safety training, or unsafe work practices.

## 7.6 COMMUNITY / PUBLIC AFFAIRS

Communication and public affairs are best handled by persons trained in dealing with the media. A Public Affairs spokesperson should be contacted as part of the emergency notification process. Public Affairs is available 24/7 to consult on media relations and community relations in the event of an emergency. However, there may be times when it is not practical to refer all questions from the media and public to Public Affairs. Indeed, a factual, short response can help reduce the time and effort ultimately needed to respond to the media and public.

The senior ranking Anadarko onsite employee or his/her designate, if approached for a statement, may respond to questions from the media. Ideally, that individual should have already gone through Anadarko-



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sponsored media training and thereby be approved as a spokesperson prior to talking to the reporters in an emergency situation.

The Public Affairs Emergency Hotline number is: **1-888-387-8973**



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## EXAMPLE – EMERGENCY COMMUNICATIONS

### INITIAL VERBAL MEDIA RESPONSE

“A \_\_\_\_\_ (release, fire, accident) occurred at Anadarko’s \_\_\_\_\_ (name of facility, location, etc.) in \_\_\_\_\_ (city) at approximately \_\_\_\_\_ (time), \_\_\_\_\_ (date). Anadarko has initiated response activities and authorities have been notified. Additional information will be provided as appropriate.”

General statements below may also be given verbally by site manager and communications director in response to media inquiries:

**General comments for verbal use only in response to media inquiries to be given by site supervisor or communications director as appropriate**

1. “Safety and environmental responsibility are top priorities at Anadarko. While prevention of this type of situation is a core part of our operational strategy, we do prepare for these situations and emphasize internal response training.”
2. “(We are responding) or (Necessary teams are responding) and we will share appropriate information with you when it is available.”
3. Answers to general questions about the site/facility.

<b>1</b>	The response should be a short statement of the facts.
<b>2</b>	Estimates or speculations as to cause or size of the problem must not be made.
<b>3</b>	Information requests for more than the facts relating directly to the immediate emergency (such as our future plans, amount of damage, what other hazards might exist, previous inspections done at the facility, any citations we may have received, etc.) shall be addressed by indicating that a company representative/spokesperson will address the media when more information is known about the incident.
<b>4</b>	If you are going to be questioned in front of a camera, consider your appearance and what will be in the background (behind you) of your interview.
<b>5</b>	If possible, your interview should be done with a neutral or non-threatening background.



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## **INCIDENT COMMAND SYSTEM**

In the 1970's, the Incident Command System (ICS) was formed to provide a consistent organization to respond to various emergency situations. Positions within the ICS are fixed and have specific functions, ensuring that all responders know what to do and where they belong in the structure.

The ICS structure utilized by Anadarko is based on the National Interagency Incident Management System (NIIMS) and is consistent with the National Contingency Plan (NCP). NIIMS ICS provides a commonly understood framework that allows for effective interaction among response personnel. In some cases, ICS information specific to Anadarko has been modified to account for lessons learned during oil spill responses. Otherwise, traditional NIIMS ICS is followed to the extent possible.

The following document is intended to provide guidance to Emergency Management Team members and response personnel regarding the Incident Command System (ICS). It is meant to be a quick-reference and tool for training, not a text on the broad scope of ICS and how it functions.

For additional information regarding ICS and how it applies to Anadarko, please contact the Emergency Preparedness and Response Program Coordinator or your local Environmental Team Member.

### *References:*

*U.S. Coast Guard Incident Management Handbook, Incident Command System (ICS), COMDTPUB P3120.17, April 2001*

*U.S. Coast Guard Oil Spill Field Operations Guide, ICS-OS420-1, June 2000*

*dbSoft, Inc. Incident Command System Forms, 1997-2006*



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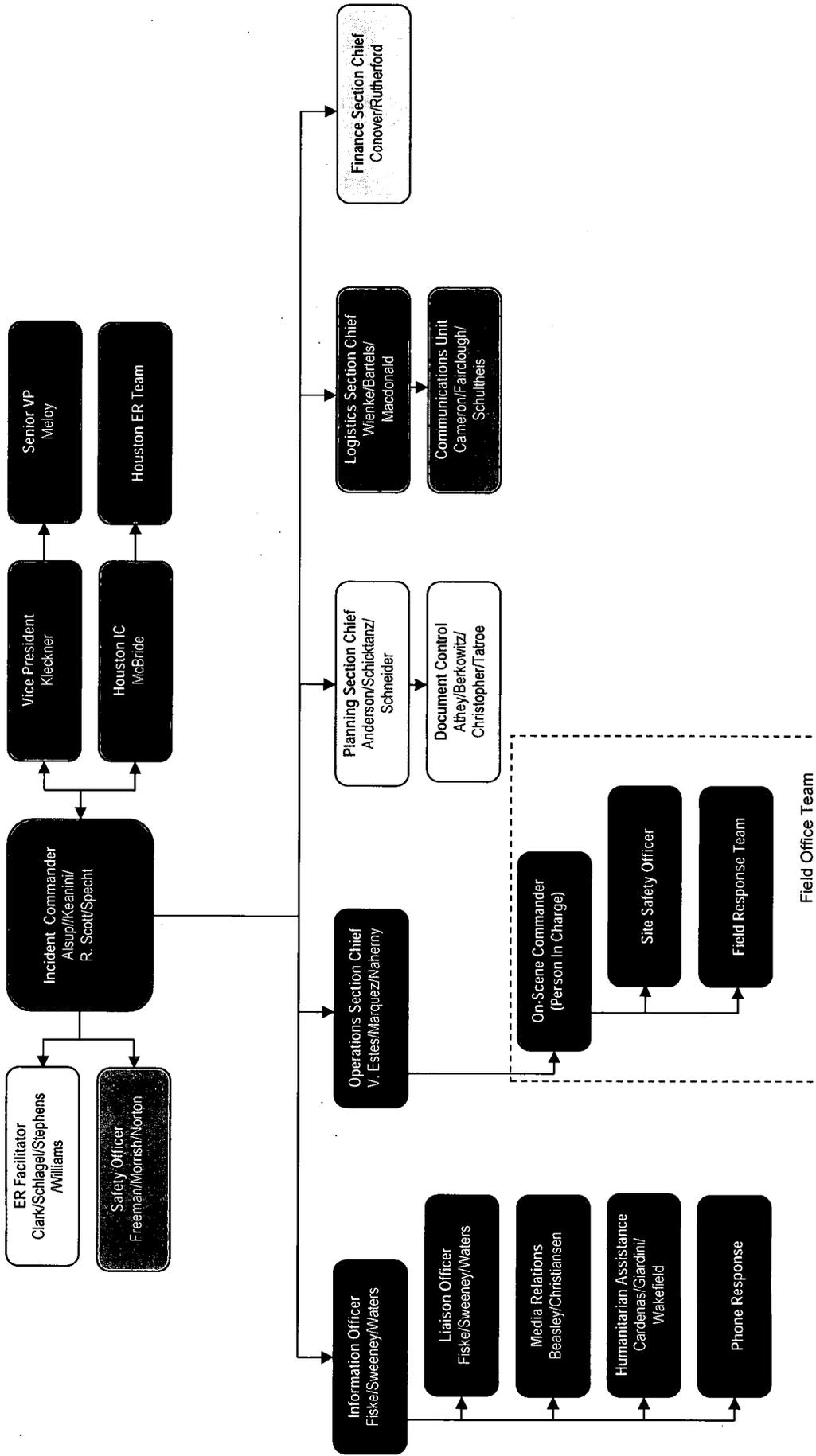
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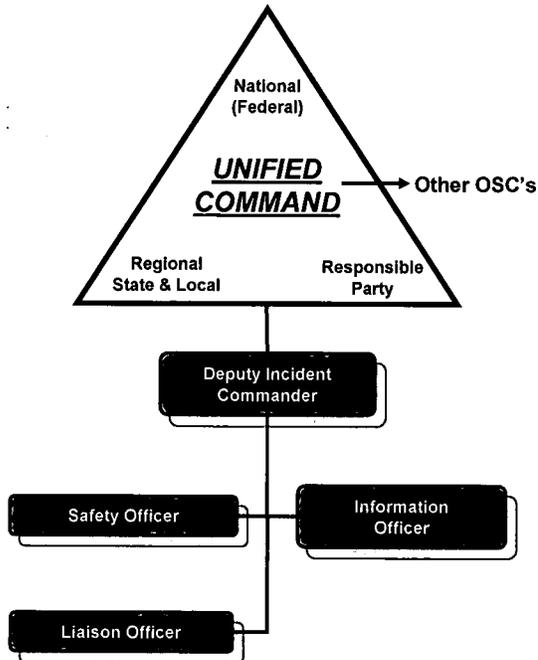
### Rocky Mountain Emergency Response Team





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## Unified Command



Unified Command (UC) Representatives must be able to:	
1	Agree on common incident objectives and priorities;
2	Have the capability to sustain a 24-hour/7-day/week commitment to the incident;
3	Have the authority to commit agency or company resources to the incident;
4	Have the authority to spend agency or company funds;
5	Agree on an incident response organization;
6	Agree on the appropriate Command and General Staff position assignments to ensure clear direction for on-scene tactical resources;
7	Commit to speak with "one voice" through the IO or JIC, if established;
8	Agree on logistical support procedures; and
9	Agree on cost-sharing procedures, as appropriate.
10	It is important to note that participation in a UC occurs without any agency abdicating authority, responsibility or accountability.



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<b>INCIDENT COMMANDER (IC/QI)</b> (Qualified Individual)	
<i>Responsible for overall command and control of emergency response effort</i>	
<b>*</b>	<b>Response Actions</b>
	Assess the situation and determine the appropriate level of response, including requesting assistance from local, State and/or Federal agencies, if necessary.
	Ensure that personnel safety is accorded the highest priority.
	Develop strategic objectives & response priorities to guide response.
	Supervise the overall response to ensure it is consistent with company policy & appropriate government directives.
	Ensure that required notifications are made in a timely manner.
	Establish an ICP and an appropriate organization.
	Brief & coordinate activities with Command Staff and Section Chiefs.
	Assume all duties and responsibilities of the Deputy Incident Commander, if one is not designated.
	Ensure source control & response operations are closely coordinated.
	Ensure planning meetings are scheduled as required.
	Approve and authorize the implementation of an IAP.
	Serve as the Company's primary spokesperson with the news media.
	Review and approve resource allocations and changes as requested.
	Ensure that Management is periodically informed of the status of response operations.
	Keep agency administrator informed of incident status.
	Approve the use of trainees, volunteers, and auxiliary personnel.
	Authorize release of information to the news media.
	Ensure incident Status Summary (ICS Form 209) is completed and forwarded to appropriate higher authority.
	Order the demobilization of the incident when appropriate.



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<b>SAFETY OFFICER</b>	
<i>Responsible for the overall safety of emergency response operations</i>	
<b>*</b>	<b>Response Actions</b>
	Review Common Responsibilities
	Participate in planning meetings.
	Identify hazardous situations associated with the incident.
	Develop the Site Safety Plan and Medical Plan (ICS Form 206 and 208) as required.
	Provide the Planning Section with health and safety messages for the daily action plans.
	Coordinate safety & health related communications by developing & issuing safety bulletins, alerts, etc., on issues affecting or likely to affect worker safety.
	If temporary assistance is needed, select & supervise contract personnel.
	Ensure that the Finance Section is advised of all cost commitments.
	Ensure that domestic response operations are conducted in compliance with HAZWOPER requirements:
	Provide and/or arrange for safety-related HAZWOPER training for APC, contract, and volunteer personnel. Maintain safety training records.
	Monitor contractors for conformance with safety requirements and associated recordkeeping requirements.
	Record APC safety-related accidents that occur during response operations, and develop remedial actions to avoid future occurrences.
	Ensure compliance with all relevant OSHA requirements. Serve as liaison with Federal and State OSHA Representatives.
	Exercise emergency authority to prevent or stop unsafe acts.
	Set up and implement a system to identify & eliminate safety hazards.
	Locate, set up, and man first aid stations in the field.
	Review the IAP for safety implications.
	Assign specialist appropriate to the response.
	Maintain Individual/Activity Log (ICS Form 214a).



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#### **LIAISON OFFICER**

*Responsible for assuming main point of contact role for regulatory agency involvement*

*	Response Actions
	Review Common Responsibilities.
	Be a contact point for Agency Representatives.
	Document agency notifications using the Notification Status Report.
	Maintain a list of assisting and cooperating agencies and Agency Representatives.
	Monitor check-in sheets daily to ensure that all Agency Representatives are identified.
	Assist in establishing and coordinating interagency contacts.
	Keep agencies supporting the incident aware of incident status.
	Monitor incident operations to identify current or potential inter-organizational problems.
	Participate in planning meetings, providing current resource status, including limitations and capability of assisting agency resources.
	Coordinate response resource needs for Natural Resource Damage Assessment and Restoration (NRDAR) activities with the OPS during oil and HAZMAT responses.
	Coordinate response resource needs for incident investigation activities with the OPS.
	Ensure that all required agency forms, reports and documents are completed prior to demobilization.
	Have debriefing session with the IC prior to departure.
	Coordinate activities of visiting dignitaries
	Maintain Individual/Activity Log (ICS Form 214a).



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<b>INFORMATION OFFICER</b>	
<i>Responsible for developing and releasing information about the incident and managing personnel issues due to accidents/injuries</i>	
<b>*</b>	<b>Response Actions</b>
	Review Common Responsibilities.
	Determine from the IC if there are any limits on information release.
	Develop material for use in media briefings.
	Obtain IC approval of media releases.
	Inform media and conduct media briefings.
	Arrange for tours and other interviews or briefings that may be required.
	Obtain media information that may be useful to incident planning.
	Maintain current information summaries and/or displays on the incident and provide information on the status of the incident to assigned personnel.
	Ensure that Joint Information Center leadership is assigned.
	Maintain Unit/Activity Log (ICS Form 214).



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<b>OPERATIONS SECTION CHIEF</b>	
<i>Responsible for management of all operations directly applicable to the response effort</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities.
	Supervise the development & distribution of the daily tactical operations plans.
	Review strategic objectives & response priorities (ICS 202) & develop response strategies & tactics to accomplish strategic objectives.
	Ensure that Operations personnel have the equipment, materials, and supplies needed to carry out response operations in a safe, effective, and efficient manner.
	Brief & assign Operations Section personnel in accordance with IAP.
	Provide regular briefings on the nature and status of response ops.
	Coordinate response operations carried out by oil spill cooperatives, response contractors/organizations, and/or government agencies.
	Determine need and request additional resources.
	Request resources needed to implement Operation's tactics part of the Incident Action Plan development (ICS 215).
	Ensure compliance with the Site Safety Plan by all field personnel.
	Make, or approve, expedient changes to the Incident Action Plan during the operational period, as necessary.
	Handle the release/reassignment of response resources.
	Assemble and disassemble strike teams assigned to Operations.
	Report special activities, events, & occurrences to the IC.
	Report any changes in the implementation of the IAP to the Incident Commander, Planning Section Chief, and the Information Officer.
	Respond to resource requests in support of NRDAR activities.
	Maintain Individual/Activity Log (ICS Form 214a).



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<b>ON-SCENE COMMANDER</b>	
<i>Responsible for organizing and managing on-scene tactical response operations in a safe and effective fashion and for keeping the balance of the Emergency Response Team (ERT) informed about the nature and status of the incident and tactical response operations.</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities.
	Account for all personnel and activate emergency medical activities if necessary.
	Alert other personnel in area about nature and location of incident and, if necessary, establish Isolation Perimeter and evacuate non-responder personnel to a safe area outside perimeter.
	Determine type and level of security needed to maintain Isolation Perimeter; if necessary, establish Security Task.
	Evaluate the severity of the emergency and inform the incident manager.
	Initiate and maintain "Incident Record Sheet".
	Make initial contact with the Incident Commander.
	Make an initial evaluation of the emergency response and establish the need for additional resources.
	Monitor the spill and provide updates to the Operations Section Chief.
	Authorize evacuation.
	Isolate and/or secure the source of the release if it can be done safely.
	Assume on-scene command and establish Field Command Post (FCP).
	Develop site safety plan.
	Compile and maintain appropriate documentation.



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<b>SITE SAFETY OFFICER</b>	
<i>Responsible for ensuring that all appropriate actions are taken to protect the health and safety of at-the-scene tactical response personnel.</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities
	Travel to Incident scene; check in at Field Command Post (FCP); report to On-scene Commander. If necessary, assist On-scene Commander and/or Safety Officer in determining safe approach guidelines.
	If necessary, assist On-scene Commander in defining Isolation Perimeter, and in determining need to evacuate non-responders from Isolation Zone.
	Receive guidance from On-scene Commander on problem(s) to be addressed, solution(s) to problem(s), and task(s) to be performed.
	Ensure that all the safety procedures are being followed.
	Assist the on-site commander to evaluate the severity of the emergency.
	Initiate and maintain "Incident Record Sheet".
	Develop initial and long term Site Safety Plan (SSP).
	Work with On-scene Commander to institute personnel accountability system at incident scene.
	Initiate mobilization of air monitoring equipment and personnel to the staging area.
	Characterize hazards in area(s) where task(s) are to be carried out before task(s) is/are initiated; and document hazard identification processes used to determine PPE, Control Zones and Decontamination procedures if applicable.
	If necessary, organize and manage a Site Entry Team to carry out on-site Site Characterization.
	Determine PPE and decontamination procedures if necessary.
	Work with On-scene Commander and/or Safety Officer to develop emergency medical procedures.
	Evaluate need for first aid at incident scene; establish first aid station(s).
	If tactical response operations are broken down into Branches and/or Divisions, determine need for Site Safety Officer(s) at Branch and/or Division level(s).
	Participate in all related investigations; issue Safety Bulletin(s).
	Work with Sources Control Section Chief.
	Advise Logistics Section Chief and/or Operations Section Chief regarding food, water, shelter, and sanitary requirements for tactical responders.
	Compile and maintain appropriate documentation.
	Maintain Individual/Activity Log (ICS Form 214a).



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<b>LOGISTICS SECTION CHIEF</b>	
<i>Responsible for providing facilities, services and material in support of the incident.</i>	
<b>*</b>	<b>Response Actions</b>
	Review Common Responsibilities.
	Plan the organization of the Logistics Section.
	Assign work locations and preliminary work tasks to Section personnel.
	Notify the Resources Unit of the Logistics Section units activated including names and locations of assigned personnel.
	Participate in preparation of the IAP.
	Assist the Resource Unit in the development of the ICS 215 Operational Planning Worksheet and order additional resources identified using the ICS 215.
	Identify service and support requirements for planned and expected operations.
	Provide input to and review the Communications Plan and Traffic Plan.
	Coordinate and process requests for additional resources.
	Communicate with Resource Unit & Staging Area Manager regarding ordered/en-route resources.
	Review IAP & estimate Section needs for the next operational period.
	Advise on current service and support capabilities.
	Prepare service and support elements of the IAP and estimate future requirements.
	Receive Incident Demobilization Plan from Planning Section.
	Recommend release of Unit resources in conformity with Incident Demobilization Plan.
	Ensure the general welfare and safety of Logistics Section personnel.
	Maintain Unit/Activity Log (ICS Form 214).



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**COMMUNICATIONS UNIT LEADER**

*Responsible for developing plans for the effective use of incident communications equipment and facilities.*

*	Response Actions
	Review Unit Leader Responsibilities
	Determine Unit personnel needs and assign Communications Specialists.
	Set up telephone and public address systems.
	Prepare and implement the Incident Radio Communications Plan (ICS Form 205).
	Ensure the Incident Communications Center, Field Communications Division/Group Supervisors, and the Message Center is established.
	Establish appropriate communications distribution/maintenance locations including radio/cellular battery recharge facilities
	Ensure communications systems are installed and tested.
	Ensure an equipment accountability system is established.
	Ensure personal portable radio equipment from cache is distributed per Incident Radio Communications Plan.
	Provide technical information as required on:
	- Adequacy of communications systems currently in operation.
	- Geographic limitation on communications systems.
	- Equipment capabilities/limitations.
	- Amount and types of equipment available.
	- Anticipated problems in the use of communications equipment.
	Supervise Communications Unit activities.
	Maintain records on all communications equipment as appropriate.
	Ensure equipment is tested and repaired.
	Recover equipment from Units being demobilized.
	Maintain Unit/Activity Log (ICS Form 214).



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<b>PLANNING SECTION CHIEF</b>	
<i>Responsible for the collection, evaluation, dissemination and use of information about the development of the incident and the status of resources.</i>	
<b>*</b>	<b>Response Actions</b>
	Review Common Responsibilities.
	Notify Regulatory Agencies.
	Collect and process up-to-date situation information about the incident.
	Ensure that systems are established that will facilitate the collection, evaluation, analysis, and dissemination of information and data.
	Coordinate with the Unified Command to establish a meeting schedule to support the preparation of Incident Action Plans (Planning Cycle)
	Provide input to the IC and the OPS in preparing the IAP.
	Prepare Daily Strategic Objectives (ICS 202) and assist Incident Commander in development of Overall Strategic Objectives.
	Ensure environmental issues are being appropriately coordinated
	Chair planning meetings and participate in other meetings as required.
	Brief Section Unit Leaders on the results of meetings, the contents of Incident Action Plans, and other matters related to section operations.
	Determine need for any specialized resources in support of incident.
	Supervise the compilation of environmental information necessary to obtain government agency permits and approvals.
	Oversee preparation and implementation of the Demobilization Plan.
	Supervise the preparation of the IAP & incorporate plans (e.g., Traffic, Medical, Communications, Site Safety) into the IAP.
	Identify sensitive areas and recommend response priorities.
	Following consultation with natural resource trustees, provide input on wildlife protection strategies (e.g., removing oiled carcasses, pre-emptive capture, hazing, and/or capture and treatment).
	Determine the extent, fate, and effects of contamination.
	Acquire, distribute, and provide analysis of weather forecasts.
	Monitor the environmental consequences of cleanup actions.
	Identify the need for, and obtain, permits, consultations, and other authorizations including Endangered Species Act (ESA) provisions.
	Historical/Cultural Resources Technical Specialist identify and develop plans for protection of affected historical/cultural resources.
	Develop disposal plans.



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**PLANNING SECTION CHIEF (cont.)**

*Responsible for environmental matters associated with the response, including strategic assessment, modeling, surveillance, and environmental monitoring and permitting.*

*	Response Actions
	Develop a plan for collecting, transporting, and analyzing samples.
	Maintain Unit/Activity Log (ICS Form 214).
	Display the following situation status information: <ul style="list-style-type: none"> <li>i. Map(s) depicting the location of environmentally sensitive areas, group(s) assigned to wildlife capture and/or Natural Resource Damage Assessment operations, and/or Waste Storage and Disposal Facilities.</li> <li>ii. Type and number of wildlife captured, cleaned, rehabilitated, and released.</li> <li>iii. Type and quantity of waste materials collected, stored, and disposed of at agency approved facilities.</li> </ul>
	Identify sensitive resources that could be affected and help determine priorities and methods of protection.
	Advise the Public/Government Affairs Officer on the appropriate environmental regulatory agencies that should be notified and kept informed on the status of response operations and their impact on the environment.
	Provide the Operations Section Chief with current and predicted weather and oceanographic data.
	Design a Monitoring Program, including the collection and preservation of samples from affected and unaffected areas.
	Work with agencies to identify environmentally sensitive areas and wildlife habitats.
	Coordinate wildlife rescue and rehabilitation operations with federal and state resource agencies.
	Identify experts to conduct wildlife capture, transport, cleaning, rehabilitation, and release operations.
	Coordinate with the U.S. Fish and Wildlife Service the recovery, transfer, and/or disposal of animal carcasses.



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<b>DOCUMENTATION UNIT LEADER</b>	
<i>Responsible for the maintenance of accurate, up-to-date, incident files.</i>	
<b>*</b>	<b>Response Actions</b>
	Review Common Responsibilities.
	Review Unit Leader Responsibilities.
	Establish documentation "in-box" in each section.
	Coordinate with the Situation Unit Leader to compile up-to-date information & the maintenance of the Display and Distribution Center
	Set up work area; begin organization of incident files.
	Establish duplication service; respond to requests.
	File all official forms and reports.
	Attend daily Planning and Briefing Meetings as requested by Planning Section Chief.
	Review records for accuracy and completeness; inform appropriate units of errors or omissions.
	Work with the Legal Officer to develop Documentation Guidelines for distribution to appropriate response personnel.
	Provide incident documentation as requested.
	Store files for post-incident use.
	Collect all Unit Logs (ICS 214s) and Individual Logs (ICS 214a) and related documentation prior to demobilization.
	Maintain Unit/Activity Log (ICS Form 214).



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<b>FINANCE SECTION CHIEF - FSC</b>	
<i>Responsible for all financial, administrative, and cost analysis aspects of the incident and for supervising members of the Finance section.</i>	
<b>*</b>	<b>Response Actions</b>
	Review Common Responsibilities
	Attend planning meetings as required.
	Manage all financial aspects of an incident.
	Ensure that appropriate cost and accounting control systems are established.
	Provide adequate accounting systems, including auditing, billing and documenting labor, material and services used.
	Provide financial and cost analysis information as requested.
	Gather pertinent information from briefings with responsible agencies.
	Develop an operating plan for the Finance/Administration Section; fill supply and support needs.
	Coordinate with Logistics Section and Resource Unit regarding equipment resources and associated status for cost accounting purposes
	Determine the need to set up and operate an incident commissary.
	Meet with Assisting and Cooperating Agency Representatives, as needed.
	Maintain daily contact with agency(s) administrative headquarters on Finance/Administration matters.
	Ensure that all personnel time records are accurately completed and transmitted to home agencies, according to policy.
	Provide financial input to demobilization planning.
	Ensure that all obligation documents initiated at the incident are properly prepared and completed.
	Brief agency administrative personnel on all incident-related financial issues needing attention or follow-up prior to leaving incident.
	Maintain Unit/Activity Log (ICS Form 214).



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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## Rocky Mountain Region Emergency Response Team Contact Information

Name	Title	Office	Cell	Home
<b><i>Incident Commander</i></b>				
Alsop, Jim	General Manager, Operations	720.264.2742	303.653.8713	303.799.8633
Keanini, Dave	General Manager, Engineering	303.450.8402	303.884.3125	303.428.2595
Scott, Reed	General Manager, Business Services	720.264.2790	303.916.6206	303.346.9016
Specht, Rex	Operations Manager	303.252.6246	303.241.3582	720.851.5506
<b><i>ER Facilitator</i></b>				
Clark, Terry	Health & Safety Manager	303.450.3597	303.887.2488	303.460.8651
Schlagel, Phil	EHS Manager	720.264.6798	720.470.9215	303.954.8222
Stephens, Dave	EHS Manager	303.450.8418	303.550.0706	303.550.0706
Williams, Alan	Director, EHS	720.264.2732	303.819.1252	720.887.5807
<b><i>Safety Officer</i></b>				
Freeman, Joe	Health & Safety Supervisor	720.264.2810	303.710.9988	970.587.0945
Morrish, Rick	Staff Safety & Health Analyst	303.655.4305	303.570.4745	303.457.3590
Norton, Matt	Sr. Regulator Analyst	303.450.8466	719.964.7923	303.799.6718
<b><i>Information Officer &amp; Liaison Officer</i></b>				
Fiske, Jeff	Sr. Counsel	720.264.2804	303.908.1661	303.793.0716
Sweeney, Patty	Human Resources Manager	720.264.2844	303.241.1030	303.770.9553
Waters, Richard	Sr. Counsel	720.264.6703	303.548.5605	720.344.2809
<b><i>Humanitarian Response</i></b>				
Cardenas, Ron	Sr. Staff HS Business Partner	307.437.9534	303.328.8659	720.890.4077
Giardini, Linda	Sr. Staff HS Business Partner	970.506.5871	303.819.1797	970.353.9879
Wakefield, Julie	HR Rep. II	720.264.2803	303.710.0176	720.977.7121
<b><i>Vice President</i></b>				
Kleckner, Jim	VP Operations - Rockies	720.264.2800	303.250.4804	303.763.6953
<b><i>Planning Section Chief</i></b>				
Anderson, Don	Env. & Reg. Supervisor	303.450.8411	303.807.7691	303.971.0458
Schickltanz, Ed	Env. & Reg. Supervisor	720.264.2717	303.868.0937	303.840.8371
Schneider, Paul	Staff EHS & Reg. Analyst	720.264.2715	303.868.6665	303.697.1360
<b><i>Operations Section Chief</i></b>				
Estes, Vic	Drilling Manager	720.264.2823	832.217.8088	281.370.7970
Marques, Tony	Engineering Manager	303.450.8423	303.815.4377	303.469.9196
Naherny, Brent	Production Eng. Manager	720.264.6748	720.284.1112	303.862.7336
<b><i>Logistics Officer</i></b>				
Bartels, Cal	Supply Chain Advisor	970.506.5866	970.590.6272	970.867.5707
Macdonald, Rindee	Sr. Supply Chain Rep.	720.264.2765	303.489.0599	303.773.3930



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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Name	Title		Office	Cell	Home
Wienke, Pat	Supply Chain Supervisor		720.264.6675	281.723.7536	303.660.1641
<b>Technical Support</b>					
Sanchez, Joseph	Staff Engineer		303.655.4319	303.901.6560	303.654.1625
<b>Communications Unit</b>					
Cameron, Jim	Global Customer Support Mgr.		303.252.6039	303.349.8915	303.341.1103
Fairclough, Diane	Customer Support Center Mgr.		720.264.2677	720.560.5428	720.560.5428
Schultheis, Mark	Enterprise Computing Manager		303.349.8579	303.349.8579	303.828.4638
<b>Finance Section Chief</b>					
Conover, Christy	Accounts Payable Supervisor		303.252.6050	303.601.6248	303.655.1770
Rutherford, Stephanie	Property Accounting Manager		303.252.6115	303.868.8176	303.440.7088
<b>Document Control</b>					
Athey, Pat	Sr. Administrative Assistant		720.264.2701	303.710.0637	303.762.9377
Berkowitz, Stacey	Staff Administrative Assistant		720.264.2754	303.489.6016	303.142.9321
Christopher, Shawnda	Sr. Operations Specialist		303.252.6030	303.242.6106	303.650.4398
Tatroe, Keith	EHS Specialist II		720.264.2716	303.919.1494	303.252.8816
<b>ERT Support</b>					
Duncan, Mike	Sr. Staff EHS Specialist	Midwest	307.437.9518	307.262.9804	307.437.6295
Estes, Carroll	Staff EHS & Reg. Analyst	Vernal	435.781.7009	435.828.7009	435.789.3301
Faber, Colleen	Sr. Regulatory Analyst	Gillette	307.685.5741	307.660.1602	303.685.1570
Farrell, John	Sr. Env. & Reg. Analyst	Midwest	307.437.9568	307.262.1940	307.266.1220
Gallagher, Adam	Sr. Env. & Reg. Analyst	Gillette	307.685.5768	307.660.2741	307.756.3407
Hamilton, Greg	EHS Analyst	Evans	970.506.5948	970.590.6256	970.304.9304
Henry, Tami	Staff EHS Specialist	Gillette	307.685.5771	307.680.9824	307.685.4434
Hutzenbiler, Lea	Safety & Health Analyst II	Rock Springs	307.352.3316	307.354.8040	307.362.5940
Jackson, Henry	Safety & Health Supv.	Casper	307.233.4522	307.262.2899	307.235.9946
Kalivas, Tom	Staff EHS Specialist	Gillette	307.685.5765	307.680.4365	NA
Kalus, Tim	Sr. Water Mgmt. Coord.	Gillette	307.685.5742	307.660.1480	307.684.7540
Lass, Joel	Sr. S&H Analyst	Gillette	307.685.4135	307.660.0079	307.660.0079
Lingo, Steve	Sr. Staff EHS Specialist	Midwest	307.437.9509	307.262.9793	307.437.6614
Muller, John	Staff S&H Analyst	Midwest	307.437.9507	307.259.1167	307.235.3329
Peterson, Bret	Env. & Regulatory Supv.	Denver	303.252.6146	303.521.7506	NA
Salazar, Rick	Staff EHS & Reg. Analyst	Vernal	435.781.7043	435.828.7063	435.789.3003
Schweighart, Jeff	Sr. Regulatory Analyst	Gillette	307.328.7063	307.272.5201	307.388.4663
Spencer, Tim	Staff S&H Analyst	Evans	970.506.5925	970.590.6252	970.351.6438
Thingelstad, Rebecca	EHS Analyst I	Woodlands	303.252.6183	832.381.4584	
Wolberg, Peter	Staff EHS & Reg. Analyst	Denver	303.252.6105	303.257.6884	NA
Zimbelman, David	Sr. Staff EHS Specialist	Gillette	307.685.5761	307.660.1620	NA



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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## Houston Emergency Response Team

Name	Title	Office	Office	Cellular	Home
Cowan, Dennis	Director, Safety & Health	Woodlands	832.636.2600	713.819.8625	281.719.0789
Grygar, Bill	Env. & Regulatory Manager	Woodlands	832.636.2656	281.386.6459	281.374.9622
McBride, David	VP, EHS	Woodlands	832.636.4896	832.474.1926	281.367.0260
Meloy, Chuck	Sr. VP, Worldwide OPS	Woodlands	832.636.1601	713.876.6465	281.430.4129
Prihoda, Paul	Safety & Health Manager	Woodlands	832.636.2601	713.828.8242	832.731.0070
Weissling, Kent	Sr. Staff Env. & Reg. Analyst	Woodlands	832.636.2368	713.775.9591	281.225.6407
<b>Media Relations</b>					
Beasley, Paula	Senior Public Affairs Rep.	Woodlands	832.636.8765	281.728.4426	281.225.4519
Christiansen, John	External Communications Mgr.	Woodlands	832.636.8736	832.434.6884	281.252.8594



**Southern Region**

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# SPILL REPORTING

## NEW MEXICO

OIL • CONDENSATE • PRODUCED WATER SPILLS

### FEDERAL NOTIFICATIONS

Immediately report any oil, condensate or produced water spill/discharge into navigable waters or adjoining shorelines to the National Response Center (NRC) at (800) 424-8802.

For spills on Federal Land as described below, notify the Bureau of Land Management (BLM) Farmington District Office at (505) 599-8900:

#### Major Breaks, Spills, or Leaks:

- Uncontained spills greater than 100 barrels of liquid or any spill in a sensitive area requires phone notification within 24 hours and a written notice within 15 days.

#### Minor Breaks, Spills, or Leaks:

- Uncontained spills between 10 and 100 barrels of liquid, or contained spills greater than 100 barrels of liquid requires written report within 15 days.

### STATE NOTIFICATIONS

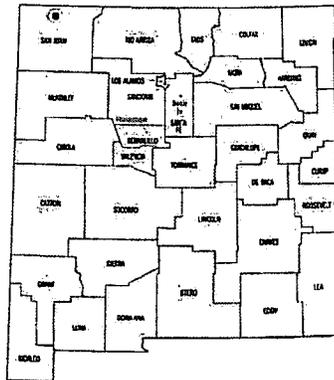
Immediately report (within 24 hours after discovery) the following major spills to the New Mexico Oil Conservation Division (NMOCD) Aztec District Office at (505) 334-6178. Follow up with a written report (NMOCD Form C-141) to the NMOCD District Office within 15 days.

- Oil, condensate or produced water spills greater than 25 barrels
- Any oil, condensate or produced water spill that results in a fire
- Any oil, condensate or produced water spill that will reach a watercourse
- Any oil, condensate or produced water spill that endangers the public or results in substantial damage

Report oil, condensate or produced water spills greater than 5 barrels but not more than 25 barrels in a written report to the NMOCD Aztec District Office within 15 days.

Immediately report any oil, condensate or produced water spill which could endanger human health, animal or plant life, or property to the New Mexico Environment Department (NMED) at (505) 827-1758. Follow up with a written report within 7 days.

For chemical spills contact the EHS Department for assistance.



#### ANADARKO FIELD OFFICE LOCATIONS

- Kirtland

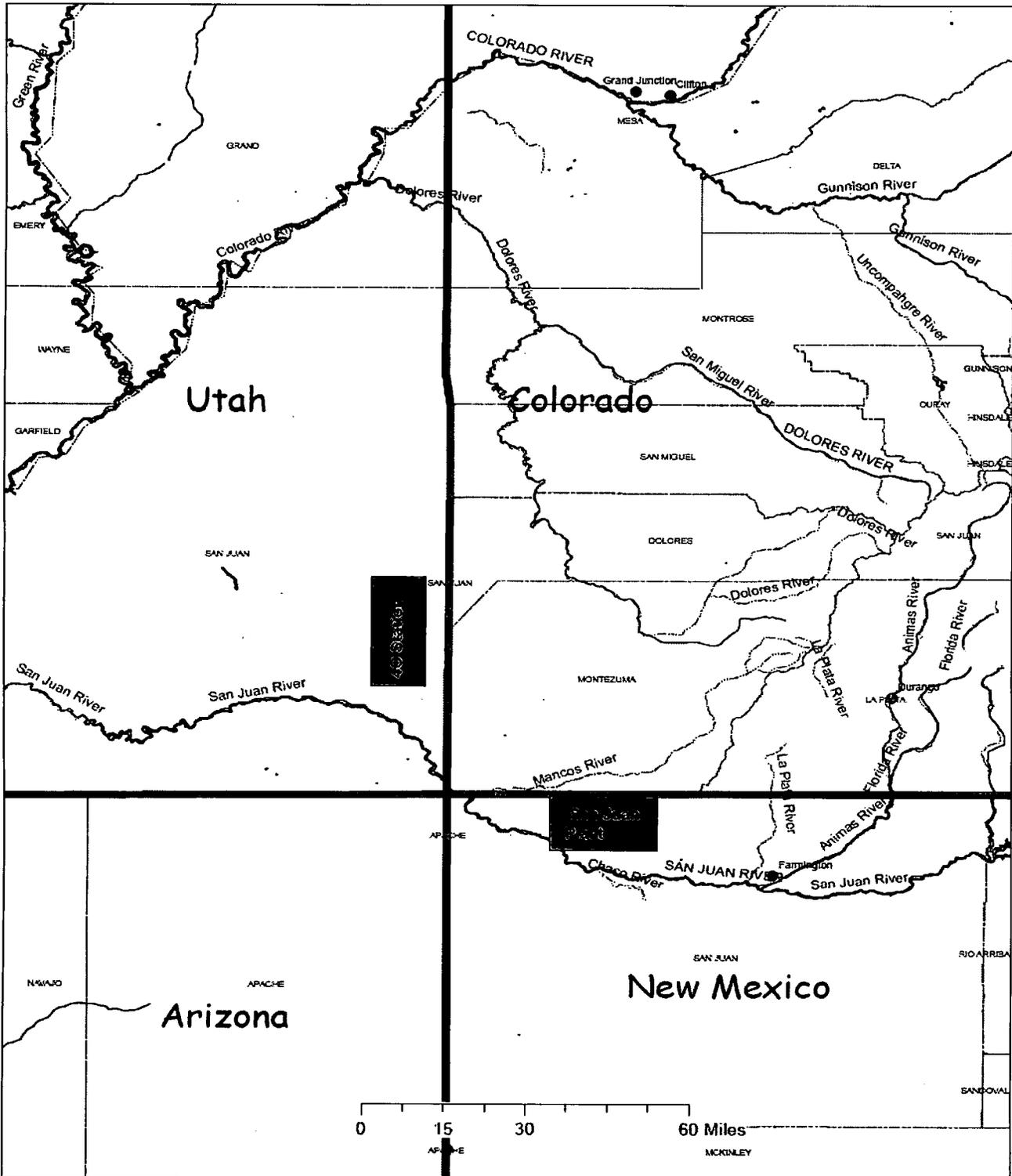
**Anadarko**  
Petroleum Corporation



# Southern Region

## Emergency Response / Oil Spill Contingency Plan

Appendix No.: C  
Appendix: San Juan Basin  
Revision: 01/15/2009





<b>Southern Region</b>	
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**San Juan Basin Area**

**Critical Water Use Areas**

- Barkers Arroyo
- Coal Bed Canyon
- Montezuma Canyon
- San Juan River
- Youngs Lake

During a storm event, the potential also exists for a discharge to reach one of the critical water use areas listed above via intermittent or dry creek beds in the area.

**Risk Assessment and Response Strategy**

The total daily liquid production rate at each facility in this area is very small, however condensate volumes collected during gathering line pigging operations can be as much as 300 barrels of condensate per day. For planning purposes, the worst-case discharge is therefore the volume of condensate that could be released during a pipeline pigging operation, or 300 barrels.

A discharge of this quantity of oil could potentially reach one of the critical water use areas listed above. The response strategy for this type of release consists of calling out designated spill response contractors who would deploy booms and other response equipment at various points downstream from the spill area to prevent migration and strategically place booms to protect any irrigation water intakes or other sensitive receptors. The response equipment to be used for such an event is listed in Section C.5 – Spill Response.



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## San Juan Basin Area Notification Internal / Agencies

### C.1 OFFICES

Office	Address	Phone #	Fax #
Houston Office	1201 Lake Robbins Drive The Woodlands, TX 77380	832.636.1000	
San Juan River Plant	P. O. Box 70 Kirkland, NM 87417	505.598.5601	505-598-6210

### C.2 INTERNAL NOTIFICATIONS

San Juan River Plant Mid Stream				
Name	Title	Office #	Cell #	Home #
Mario Reyes	General Manager	832.636.3431	832.636.5446	281.296.0385
Kent McEvers	Plant Supt	505.598.5601 ext 15523	505.860.7208	505.326.4054
Rich Fetch	Plant Foreman	505.598.5601 ext 15522	505.947.2416	505.324.6441
Frank Hale	Plant Operator IV	505.598.5601	505.860.5897	505.598.9091
Glen Daniell	Plant Operator IV	505.598.5601		505.632.9705
Arlyn Thorson	Sr Maintenance Foreman	505.598.5601 ext 15524	505.947.2417	505.326.6718
Charles Barr	Mechanic I	505.598.5601 ext 15541	505.324.1100	505.330.2614
Bob McClain	Operator II	505.598.5601 ext 15542	505.330.1966	505.325.8715
Brenda Wilson	Sr Ops Specialist	505.598.5601 ext 15521		505.325.6525
Eric Weaver	Sr. EHS Analyst	432.684.2808	432.413.2494	432.634.1997
Julie Betik	Sr Staff Env & Reg Analyst	832.636.2609	281.793.7705	281-320-2066
David Ponikvar	S & H Manager	832.636.3414	281.732.7887	281-374-8334
Jerry Adams	Env. Manager	832.636.8304	281.731.5931	281.363.4693



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### C.3 FEDERAL AND STATE NOTIFICATIONS

Federal	Daytime/24 Hrs.	After Hours
NRC Hotline	800.424.8802	
EPA (Region 8)	800.227.8917	
OSHA	800.321.6742	
OSHA area office New Mexico	505.827.4230	
DOT	800.424.8802	
State	Daytime/24 Hrs.	After Hours
BLM Farmington District Office	505.599.8900	
Arizona Oil & Gas Conservation Commission	520.770.3500	
Arizona Department of Environmental Quality	800.234.5677	
Arizona Emergency Response Commission	602.771.2330	
Colorado Division of Emergency Management	303.279.8855	
Colorado Department of Public Health & Environment	877.518.5608	
Colorado Oil & Gas Commission	303.894.2100	
Colorado Public Utilities Commission	303.894.2854	
New Mexico Oil Conservation Division	505.334.6178	
New Mexico Environmental Department	505.476.4300	
New Mexico Emergency Response Commission	505.476.9681	
New Mexico Public Utilities Commission	505.490.2375	
Utah Division of Oil, Gas, Mining	801.538.5340	801.243.9466
Utah Division of Wildlife Resources	801.538.4700	
Utah Division of Public Utilities	801.530.6673	
Utah Department of Environmental Quality Division of Water Quality	801.536.4123	
New Mexico One Call	800.321.2537	
Law Enforcement Emergency Dispatch	911	
New Mexico State Patrol	505.325.7547	
New Mexico FBI	505.325.8631	
San Juan County Sheriff New Mexico	505.334.6622	
Farmington Police	505.327.0222	
Navajo Tribal Police	505.368.4333	
Ute Mountain BIA	303.565.8471	



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LEPC Name	Street	City	State	Zip Code	Phone Number
San Juan County NM LEPC	209 South Oliver	Aztec	NM	87410	505.334.1180

Name	Emergency Service	Phone Number
Emergency Dispatch	Fire Department	911
San Juan County Fire Marshall	Fire Department	505.334.9431
Emergency Dispatch	Ambulance	911
San Juan Regional Medical Center	Hospital	506.325.5011
Emergency Trauma Lifeline Service Farmington		505.325.5602
University of Utah Medical Center Salt Lake City, Utah	Hospital	800.453.0120
Dr Robert C Rhien	Doctor	505.327.4867
Dr Ken Crider	Doctor	505.327.4439
San Juan Air Care Farmington NM	Air Ambulance	800.452.9990
University of Utah Medical Center Salt Lake City, Utah	Air Ambulance	800.453.0120
St. Mary's Air Life Grand Grand Junction, Colorado	Air Ambulance	800.525.4424

### C.4 CONTRACTORS

Contractor	Contact	Office Phone Number	Cell Phone Number
<b>Contractors - General</b>			
Weeminuche Construction	Benton Dean	970.565.7430	
IMI Construction		505.325.5005	
<b>Service Companies - Saltwater Disposal</b>			



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<b>Service Companies - Supplies</b>			
Noels Inc.		505.327.3375	
ESSO Pipe and Supply		505.325.7568	
Air Gas		505.325.6660	
DXP	Steve Martinez	505.326.3333	
DeWees Tool & Supply		505.326.5491	
<b>Emergency Response and Environmental / Safety Services</b>			
ChemTrec		800.424.9300	
<b>Electrician Contacts</b>			
Four Corners Electric		505.325.1459	
B&G Electric		505.325.7511	
Other Area Producers	Contact	Office Phone Number	Emergency Phone
<b>Burr Oil and Gas</b>	Deana	505-325-1701	
1090 20 <sup>th</sup> St.	Jim Hicks	505-320-7883	
Farmington, NM 87401	Office	505-327-4902	
<b>Conoco/Burlington</b>	Jerry Loder milk cell	505-320-0452	
Gas Control	Rena	505-330-2946	
<b>DJ Simmons Company</b>	John Byrom	505.326.3753	
<b>Elm Ridge Resources</b>	Office	632-3476 Ext 210	
20th Road 5060 Bloomfield, New Mexico 87413	Terry Lindeman	972-749-6941	
<b>El Paso Natural Gas</b>		505.632.6000	800.334.8047
<b>Nacogdoches Oil and Gas</b>			
Nacogdoches, Texas (Mountain States)	Arron	936-697-3750	
<b>Resolute Natural Resources</b>	Office	970-564-5200	
23429 County Road G	Montezuma Creek office	435-651-3682	
Cortez, Colorado 81321	(Roger Atcitty) Cell	435-444-0001	
	Office	505-327-5531	



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<b>Rim SouthWest Corporation</b> 512 West Arrington Farmington, New Mexico 87401	Thelma Dee	435-651-4391	
<b>XTO Energy Inc.</b> 2700 Farmington Ave Farmington, New Mexico 87401	Office  John Weaver Cell	505-324-1090  505-330-3278	

### C.5 SPILL RESPONSE

HAZ-MAT EQUIPMENT LIST (Available at San Juan Plant)
Booms Large and small
Rubber Gloves
Half-face Disposable Respirators
Tyvek Suits
Buckets and Sprayer
Barbed Wire, Tee Post, and Carious Ropes
Sorbent pads oil only and universal type
Goggles
Nitrile Gloves
Latex Overcoat
Hylite rubber gloves
Rain Coats and pants
Caution and Duct Tape
Rakes and shovels
Disposable Boom
Fire Extinguishers & First Aid Kits
Breathing Air units Survivair , MSA and Scbag
Bow Saw



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District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report     Final Report

Name of Company	Contact
Address	Telephone No.
Facility Name	Facility Type

Surface Owner	Mineral Owner	Lease No.
---------------	---------------	-----------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

Type of Release	Volume of Release	Volume Recovered
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

Describe Area Affected and Cleanup Action Taken.\*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:		<b>OIL CONSERVATION DIVISION</b>	
		Approved by District Supervisor:	
Printed Name:		Approval Date:	Expiration Date:
Title:		Conditions of Approval:	
E-mail Address:		Attached <input type="checkbox"/>	
Date:	Phone:		

Attach Additional Sheets If Necessary

116 RELEASE NOTIFICATION AND CORRECTIVE ACTION [1-1-50...2-1-96; A, 3-15-97]

116.A. NOTIFICATION

(1) The Division shall be notified of any unauthorized release occurring during the drilling, producing, storing, disposing, injecting, transporting, servicing or processing of crude oil, natural gases, produced water, condensate or oil field waste including Regulated NORM, or other oil field related chemicals, contaminants or mixture thereof, in the State of New Mexico in accordance with the requirements of this Rule. [1-1-50...2-1-96; A, 3-15-97]

(2) The Division shall be notified in accordance with this Rule with respect to any release from any facility of oil or other water contaminant, in such quantity as may with reasonable probability be detrimental to water or cause an exceedance of the standards in 19 NMAC 15.A.19. B(1), B(2) or B(3). [3-15-97]

116.B. REPORTING REQUIREMENTS: Notification of the above releases shall be made by the person operating or controlling either the release or the location of the release in accordance with the following requirements: [5-22-73...2-1-96; A, 3-15-97]

(1) A **Major Release** shall be reported by giving **both** immediate verbal notice and timely written notice pursuant to Paragraphs C(1) and C(2) of this Rule. A Major Release is:

- (a) an unauthorized release of a volume, excluding natural gases, in excess of 25 barrels;
- (b) an unauthorized release of any volume which:
  - (i) results in a fire;
  - (ii) will reach a water course;
  - (iii) may with reasonable probability endanger public health; or
  - (iv) results in substantial damage to property or the environment;
- (c) an unauthorized release of natural gases in excess of 500 mcf; or
- (d) a release of any volume which may with reasonable probability be detrimental to water or cause an exceedance of the standards in 19 NMAC 15.A.19. B(1), B(2) or B(3). [3/15/97]

(2) A **Minor Release** shall be reported by giving timely written notice pursuant to Paragraph C(2) of this Rule. A Minor Release is an unauthorized release of a volume, greater than 5 barrels but not more than 25 barrels; or greater than 50 mcf but less than 500 mcf of natural gases. [3-15-97]

116.C. CONTENTS OF NOTIFICATION

(1) **Immediate verbal notification** required pursuant to Paragraph B shall be reported within twenty-four (24) hours of discovery to the Division District Office for the area within which the release takes place. In addition, immediate verbal notification pursuant to Subparagraph B.(1).(d). shall be reported to the Division's Environmental Bureau Chief. This notification shall provide the information required on Division Form C-141. [5-22-73 . 2-1-96; A, 3-15-97]

(2) **Timely written notification** is required to be reported pursuant to Paragraph B within fifteen (15) days to the Division District Office for the area within which the release takes place by completing and filing Division Form C-141. In addition, timely written notification required pursuant to Subparagraph B.(1).(d). shall also be reported to the Division's Environmental Bureau Chief within fifteen (15) days after the release is discovered. The written notification shall verify the prior verbal notification and provide any appropriate additions or corrections to the information contained in the prior verbal notification. [5-22-73...2-1-96; A, 3-15-97]

116.D. CORRECTIVE ACTION: The responsible person must complete Division approved corrective action for releases which endanger public health or the environment. Releases will be addressed in accordance with a remediation plan submitted to and approved by the Division or with an abatement plan submitted in accordance with Rule 19 (19 NMAC 15.A. 19). [3-15-97]

**APPENDIX F – NEW MEXICO REGULATIONS**

**TITLE 19 NATURAL RESOURCES AND WILDLIFE  
CHAPTER 15 OIL AND GAS  
PART 29 RELEASE NOTIFICATIONS**

**19.15.29.1 ISSUING AGENCY:** Energy, Minerals and Natural Resources Department, Oil Conservation Division.  
[19.15.29.1 NMAC - N, 12/1/08]

**19.15.29.2 SCOPE:** 19.15.29 NMAC applies to persons engaged in oil and gas development and production within New Mexico.  
[19.15.29.2 NMAC - N, 12/1/08]

**19.15.29.3 STATUTORY AUTHORITY:** 19.15.29 NMAC is adopted pursuant to the Oil and Gas Act, NMSA 1978, Section 70-2-6, Section 70-2-11 and Section 70-2-12.  
[19.15.29.3 NMAC - N, 12/1/08]

**19.15.29.4 DURATION:** Permanent.  
[19.15.29.4 NMAC - N, 12/1/08]

**19.15.29.5 EFFECTIVE DATE:** December 1, 2008, unless a later date is cited at the end of a section.  
[19.15.29.5 NMAC - N, 12/1/08]

**19.15.29.6 OBJECTIVE:** To require persons who operate or control the release or the location of the release to report the unauthorized release of oil, gases, produced water, condensate or oil field waste including regulated NORM, or other oil field related chemicals, contaminants or mixtures of those chemicals or contaminants that occur during drilling, producing, storing, disposing, injecting, transporting, servicing or processing and to establish reporting procedures.  
[19.15.29.6 NMAC - N, 12/1/08]

**19.15.29.7 DEFINITIONS:**

A. "Major release" means:

- (1) an unauthorized release of a volume, excluding gases, in excess of 25 barrels;
- (2) an unauthorized release of a volume that:
  - (a) results in a fire;
  - (b) will reach a watercourse;
  - (c) may with reasonable probability endanger public health; or
  - (d) results in substantial damage to property or the environment;
- (3) an unauthorized release of gases in excess of 500 MCF; or
- (4) a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC.

B. "Minor release" means an unauthorized release of a volume, greater than five barrels but not more than 25 barrels; or greater than 50 MCF but less than 500 MCF of gases.

[19.15.29.7 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**19.15.29.8 RELEASE NOTIFICATION:**

A. The person operating or controlling either the release or the location of the release shall notify the division of unauthorized release occurring during the drilling, producing, storing, disposing, injecting, transporting, servicing or processing of oil, gases, produced water, condensate or oil field waste including regulated NORM, or other oil field related chemicals, contaminants or mixture of the chemicals or contaminants, in accordance with the requirements of 19.15.29 NMAC.

B. The person operating or controlling either the release or the location of the release shall notify the division in accordance with 19.15.29 NMAC with respect to a release from a facility of oil or other water contaminant, in such quantity as may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC.

[19.15.29.8 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**19.15.29.9 REPORTING REQUIREMENTS:** The person operating or controlling either the release or the location of the release shall provide notification of releases in 19.15.29.8 NMAC as follows.

A. The person shall report a major release by giving both immediate verbal notice and timely written notice pursuant to Subsections A and B of 19.15.29.10 NMAC.

B. The person shall report a minor release by giving timely written notice pursuant to Subsection B of 19.15.29.10 NMAC.  
[19.15.29.9 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**19.15.29.10 CONTENTS OF NOTIFICATION:**

A. The person operating or controlling either the release or the location of the release shall provide immediate verbal notification within 24 hours of discovery to the division district office for the area within which the release takes place. In addition, the person shall provide immediate verbal notification of a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC to the division's environmental bureau chief. The notification shall provide the information required on form C-141.

B. The person operating or controlling either the release or the location of the release shall provide timely written notification within 15 days to the division district office for the area within which the release occurs by completing and filing form C-141. In addition, the person shall provide timely written notification of a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC to the division's environmental bureau chief within 15 days after the release is discovered. The written notification shall verify the prior verbal notification and provide appropriate additions or corrections to the information contained in the prior verbal notification.

[19.15.29.10 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**19.15.29.11 CORRECTIVE ACTION:** The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.

[19.15.29.11 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**HISTORY of 19.15.29 NMAC:**

**History of Repealed Material:** 19.15.3 NMAC, Drilling (filed 10/29/2001) repealed 12/1/08.

**NMAC History:**

That applicable portion of 19.15.3 NMAC, Drilling (Section 116) (filed 10/29/2001) was replaced by 19.15.29 NMAC, Release Notification, effective 12/1/08.

**TITLE 19 NATURAL RESOURCES AND WILDLIFE  
CHAPTER 15 OIL AND GAS  
PART 30 REMEDIATION**

**19.15.30.1 ISSUING AGENCY:** Energy, Minerals and Natural Resources Department, Oil Conservation Division.  
[19.15.30.1 NMAC - N, 12/1/08]

**19.15.30.2 SCOPE:** 19.15.30 NMAC applies to persons engaged in oil and gas development and production within New Mexico.  
[19.15.30.2 NMAC - N, 12/1/08]

**19.15.30.3 STATUTORY AUTHORITY:** 19.15.30 NMAC is adopted pursuant to the Oil and Gas Act, NMSA 1978, Sections 70-2-6, 70-2-11 and 70-2-12.  
[19.15.30.3 NMAC - N, 12/1/08]

**19.15.30.4 DURATION:** Permanent.  
[19.15.30.4 NMAC - N, 12/1/08]

**19.15.30.5 EFFECTIVE DATE:** December 1, 2008, unless a later date is cited at the end of a section.  
[19.15.30.5 NMAC - N, 12/1/08]

**19.15.30.6 OBJECTIVE:** To abate pollution of subsurface water so that ground water of the state that has a background concentration of 10,000 mg/l or less TDS is either remediated or protected for use as domestic, industrial and agricultural water supply, and to remediate or protect those segments of surface waters that are gaining because of subsurface-water inflow for uses designated in the water quality standards for interstate and intrastate surface waters in New Mexico, 20.6.4 NMAC; and abate surface-water pollution so that surface waters of the state are remediated or protected for designated or attainable uses as defined in the water quality standards for interstate and intrastate surface waters in New Mexico, 20.6.4 NMAC.  
[19.15.30.6 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.7 DEFINITIONS:** [RESERVED]  
[See 19.15.2.7 NMAC for definitions.]

**19.15.30.8 PREVENTION AND ABATEMENT OF WATER POLLUTION:**

**A.** If the background concentration of a water contaminant exceeds the standard or requirement of Subsections A, B or C of 19.15.30.9 NMAC, the responsible person shall abate the pollution to the background concentration.

**B.** The standards and requirements set forth in of Subsections A, B or C of 19.15.30.9 NMAC are not intended as maximum ranges and concentrations for use, and nothing contained in 19.15.30.9 NMAC limits the use of waters containing higher ranges and concentrations.  
[19.15.30.8 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.9 ABATEMENT STANDARDS AND REQUIREMENTS:**

**A.** The responsible person shall abate the vadose zone so that water contaminants in the vadose zone will not with reasonable probability contaminate ground water or surface water, in excess of the standards in Subsections B and C of 19.15.30.9 NMAC, through leaching, percolation or other transport mechanisms, or as the water table elevation fluctuates.

**B.** The responsible person shall abate ground-water pollution at a place of withdrawal for present or reasonably foreseeable future use, where the TDS concentration is 10,000 mg/l or less, to conform to the following standards:  
(1) toxic pollutants as defined in 20.6.2.7 NMAC shall not be present; and  
(2) the standards of 20.6.2.3103 NMAC shall be met.

**C.** The responsible person shall abate surface-water pollution to conform to the water quality standards for interstate and intrastate surface waters in New Mexico, 20.6.4 NMAC.

D. The division shall not consider subsurface-water and surface-water abatement complete until eight consecutive quarterly samples, or an alternate lesser number of samples the director approves, from the compliance sampling stations the director approved meet the abatement standards in Subsections A, B and C of 19.15.30.9 NMAC. The division shall consider abatement of water contaminants measured in solid-matrix samples of the vadose zone complete after one-time sampling from compliance stations the director approves.

E. Technical infeasibility.

(1) If a responsible person is unable to meet the abatement standards set forth in Subsections A and B of 19.15.30.9 NMAC using commercially accepted abatement technology pursuant to an approved abatement plan, the responsible person may propose that abatement standards compliance is technically infeasible.

(a) The director may consider technical infeasibility proposals involving the use of experimental abatement technology.

(b) The responsible person may demonstrate technical infeasibility by a statistically valid extrapolation of the decrease in concentrations of a water contaminant over the remainder of a 20 year period, such that projected future reductions during that time would be less than 20 percent of the concentration at the time the responsible person proposes technical infeasibility. A statistically valid decrease cannot be demonstrated by fewer than eight consecutive quarters.

(c) The technical infeasibility proposal shall include a substitute abatement standard for those contaminants that is technically feasible. The responsible person shall meet abatement standards for other water contaminants not demonstrated to be technically infeasible.

(2) The director shall not approve a proposed technical infeasibility demonstration for a water contaminant if its concentration is greater than 200 percent of the abatement standard for the contaminant.

(3) If the director cannot approve any or all portions of a proposed technical infeasibility demonstration because the water contaminant concentration is greater than 300 percent of the abatement standard for each contaminant, the responsible person may further pursue the issue of technical infeasibility by filing a petition with the division seeking approval of alternate abatement standards pursuant to Subsection F of 19.15.30.9 NMAC.

F. Alternative abatement standards.

(1) At any time during or after the stage 2 abatement plan's submission, the responsible person may file a petition seeking approval of alternative abatement standards for the standards set forth in Subsections A and B of 19.15.30.9 NMAC. The division may approve alternative abatement standards if the petitioner demonstrates that:

(a) either compliance with the abatement standards is not feasible, by the maximum use of technology within the responsible person's economic capability; or there is no reasonable relationship between the economic and social costs and benefits, including attainment of the standards set forth in 19.15.30.9 NMAC to be obtained;

(b) the proposed alternative abatement standards are technically achievable and cost-benefit justifiable; and

(c) compliance with the proposed alternative abatement standard will not create a present or future hazard to public health or undue damage to property.

(2) The responsible person shall file a written petition with the division's environmental bureau chief. The petition may include a transport, fate and risk assessment in accordance with accepted methods, and other information as the petitioner deems necessary to support the petition. The petition shall:

(a) state the petitioner's name and address;

(b) state the date of the petition;

(c) describe the facility or activity for which the petitioner seeks the alternate abatement standards;

(d) state the address or description of the property upon which the facility is located;

(e) describe the water body or watercourse the release affected;

(f) identify the abatement standard from which petitioner wishes to vary;

(g) state why the petitioner believes that compliance with 19.15.30 NMAC will impose an unreasonable burden upon the petitioner's activity;

(h) identify the water contaminant for which the petitioner proposes the alternative standard;

(i) state the alternative standard the petitioner proposes;

(j) identify the three-dimensional body of water pollution for which the petitioner seeks approval; and

(k) state the extent to which the abatement standards set forth in 19.15.30.9 NMAC are now, and will in the future be, violated.

(3) The division's environmental bureau chief shall review the petition and, within 60 days after receiving the petition, submit a written recommendation to the director to approve, approve subject to conditions or disapprove any or all of the proposed alternative abatement standards. The recommendation shall include the reasons for the division's environmental

bureau chief's recommendation. The division's environmental bureau chief shall submit a copy of the recommendation to the petitioner by certified mail.

(4) If the division's environmental bureau chief recommends approval, or approval subject to conditions, of any or all of the proposed alternative abatement standards, the division shall hold a public hearing on those standards. If the division's environmental bureau chief recommends disapproval of any or all of the proposed alternative abatement standards, the petitioner may submit a request to the director, within 15 days after the recommendation's receipt, for a public hearing on those standards. If the petitioner does not submit a timely request for hearing, the recommended disapproval shall become a final decision of the director and shall not be subject to review.

(5) If the director grants a public hearing, the division shall conduct the hearing in accordance with division hearing procedures.

(6) Based on the record of the public hearing, the division shall approve, approve subject to condition or disapprove any or all of the proposed alternative abatement standards. The division shall notify the petitioner by certified mail of its decision and the reasons for the decision.

[19.15.30.9 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.10 MODIFICATION OF ABATEMENT STANDARDS:** If applicable abatement standards are modified after the division approves the abatement measures, the abatement standards that are in effect at the time that the division approved the abatement measures shall be the abatement standards for the duration of the abatement action, unless the director determines that compliance with those standards may with reasonable probability create a present or future hazard to public health or the environment. In an appeal of the director's determination that additional actions are necessary, the director shall have the burden of proof.

[19.15.30.10 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.11 ABATEMENT PLAN REQUIRED:**

A. Unless otherwise provided by 19.15.30 NMAC responsible persons who are abating, or who are required to abate, water pollution in excess of the standards and requirements set forth in 19.15.30.9 NMAC shall do so pursuant to an abatement plan the director approves. When the director has approved an abatement plan, the responsible person's actions leading to and including abatement shall be consistent with the abatement plan's terms and conditions.

B. In the event of a transfer of the ownership, control or possession of a facility for which an abatement plan is required or approved, where the transferor is a responsible person, the transferee also shall be considered a responsible person for the abatement plan's duration, and may jointly share the responsibility to conduct the actions 19.15.30 NMAC requires with other responsible persons.

(1) The transferor shall notify the transferee in writing at least 30 days prior to the transfer that the division has required or approved an abatement plan for the facility, and shall deliver or send by certified mail to the director a copy of the notification together with a certificate or other proof that the transferee has received the notification.

(2) The transferor and transferee may agree to a designated responsible person who shall assume the responsibility to conduct the actions 19.15.30 NMAC requires. The responsible persons shall notify the director in writing if a designated responsible person is agreed upon.

(3) If the director determines that the designated responsible person has failed to conduct the actions 19.15.30 NMAC requires, the director shall notify all responsible persons of this failure in writing and allow them 30 days, or longer for good cause shown, to conduct the required actions before setting a show cause hearing requiring those responsible persons to appear and show cause why they should not be ordered to comply, a penalty should not be assessed, a civil action should not be commenced in district court or the division should not take other appropriate action.

C. If the source of the water pollution to be abated is a facility that operated under a discharge plan, the director may require the responsible person to submit a financial assurance plan that covers the estimated costs to conduct the actions the abatement plan requires. Such a financial assurance plan shall be consistent with financial assurance requirements the division adopts.

[19.15.30.11 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.12 EXEMPTIONS FROM ABATEMENT PLAN REQUIREMENT:**

A. Except as provided in Subsection B of 19.15.30.12 NMAC, 19.15.30.11 NMAC and 19.15.30.13 NMAC do not apply to a person who is abating water pollution:

- (1) from an underground storage tank, under the authority of the New Mexico environmental improvement board's underground storage tank rules, 20.5 NMAC, or in accordance with the Ground Water Protection Act, NMSA 1978, Section 74-6B-1 *et seq.*;
- (2) under the EPA's authority pursuant to either the Federal Comprehensive Environmental Response, Compensation and Liability Act, and amendments, or RCRA;
- (3) pursuant to the New Mexico environmental improvement board's hazardous waste management rule, 20.4.1 NMAC;
- (4) under the authority of the United States nuclear regulatory commission or the United States department of energy pursuant to the Atomic Energy Act;
- (5) under the authority of a ground-water discharge plan the director approved, provided that such abatement is consistent with the requirements and provisions of 19.15.30.8 NMAC, 19.15.30.9 NMAC, Subsections C and D of 19.15.30.13 NMAC, 19.15.30.14 NMAC and 19.15.30.19 NMAC;
- (6) under the authority of a letter of understanding, settlement agreement or administrative order on consent or other agreement signed by the director or director's designee prior to March 15, 1997, provided that abatement is being performed in compliance with the terms of the letter of understanding, settlement agreement or administrative order or other agreement on consent; and
- (7) on an emergency basis, or while abatement plan approval is pending, or in a manner that will likely result in compliance with the standards and requirements set forth in 19.15.30.9 NMAC within one year after notice is required to be given pursuant to 19.15.29.9 NMAC provided that the division does not object to the abatement action.

**B.** If the director determines that abatement of water pollution subject to Subsection A of 19.15.30.12 NMAC will not meet the standards of Subsections B and C of 19.15.30.9 NMAC, or that additional action is necessary to protect health, welfare, environment or property, the director may notify a responsible person, by certified mail, to submit an abatement plan pursuant to 19.15.30.11 NMAC and Subsection A of 19.15.30.14 NMAC. The notification shall state the reasons for the director's determination. In an appeal of the director's determination under Subsection B of 19.15.30.12 NMAC, the director shall have the burden of proof.

[19.15.30.12 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

#### **19.15.30.13 ABATEMENT PLAN PROPOSAL:**

**A.** Except as provided for in 19.15.30.12 NMAC a responsible person shall, within 60 days of receipt of the director's written notice that the division requires an abatement plan, submit an abatement plan proposal to the director for approval. The responsible person may submit stage 1 and stage 2 abatement plan proposals together. For good cause shown, the director may allow for a total of 120 days to prepare and submit the abatement plan proposal.

#### **B. Voluntary abatement.**

- (1) A person wishing to abate water pollution in excess of the standards and requirements set forth in 19.15.30.9 NMAC may submit a stage 1 abatement plan proposal to the director for approval. Following the director's approval of a final site investigation report prepared pursuant to stage 1 of an abatement plan, a person may submit a stage 2 abatement plan proposal to the director for approval.
- (2) Following approval of a stage 1 or stage 2 abatement plan proposal under Paragraph (1) of Subsection B of 19.15.30.13 NMAC the person submitting the approved plan shall be a responsible person under 19.15.30 NMAC for the purpose of performing the approved stage 1 or stage 2 abatement plan. Nothing in 19.15.30 NMAC precludes the director from applying 19.15.29.11 NMAC to a responsible person if applicable.

**C. Stage 1 abatement plan.** The stage 1 of the abatement plan's purpose is to design and conduct a site investigation that adequately defines site conditions, and provide the data necessary to select and design an effective abatement option. Stage 1 of the abatement plan may include the following information depending on the media affected, and as needed to select and implement an expeditious abatement option:

- (1) descriptions of the site, including a site map, and of site history including the nature of the release that caused the water pollution, and a summary of previous investigations;
- (2) site investigation work plan that defines:
  - (a) site geology and hydrogeology; the vertical and horizontal extent and magnitude of vadose-zone and ground-water contamination; subsurface hydraulic conductivity; transmissivity, storability and rate and direction of contaminant migration; inventory of water wells inside and within one mile from the perimeter of the three-dimensional body where the standards set forth in Subsection C of 19.15.30.9 NMAC are exceeded; and location and number of wells the pollution actually or potentially affects; and

- (b) surface water hydrology, seasonal stream flow characteristics, ground water/surface water relationships, the vertical and horizontal extent and magnitude of contamination and impacts to surface water and stream sediments; the magnitude of contamination and impacts on surface water may be, in part, defined by conducting a biological assessment of fish, benthic macro invertebrates and other wildlife populations; seasonal variations should be accounted for when conducting these assessments;
- (3) monitoring program, including sampling stations and frequencies, for the abatement plan's duration that may be modified, after the director's approval, as the responsible person creates additional sampling stations;
- (4) quality assurance plan, consistent with the sampling and analytical techniques listed in Subsection B of 20.6.2.3107 NMAC and with 20.6.4.14 NMAC of the water quality standards for interstate and intrastate surface waters in New Mexico, for all work to be conducted pursuant to the abatement plan;
- (5) a schedule for stage 1 abatement plan activities, including the submission of summary quarterly progress reports, and the submission, for the director's approval, of a detailed final site investigation report; and
- (6) additional information that may be required to design and perform an adequate site investigation.

**D. Stage 2 abatement plan.**

- (1) A responsible person shall submit a stage 2 abatement plan proposal to the director for approval within 60 days, or up to 120 days for good cause shown, after the director's approval of the final site investigation report prepared pursuant to stage 1 of the abatement plan. The responsible person may submit a stage 1 and 2 abatement plan proposal together. Stage 2 of the abatement plan's purpose is to select and design, if necessary, an abatement option that, when implemented, results in attainment of the abatement standards and requirements set forth in 19.15.30.9 NMAC, including post-closure maintenance activities.
- (2) Stage 2 of the abatement plan should include, at a minimum, the following information:
  - (a) a brief description of the current situation at the site;
  - (b) development and assessment of abatement options;
  - (c) a description, justification and design, if necessary, of the preferred abatement option;
  - (d) modification, if necessary, of the monitoring program the director approved pursuant to stage 1 of the abatement plan, including the designation of pre- and post-abatement-completion sampling stations and sampling frequencies to be used to demonstrate compliance with the standards and requirements set forth in 19.15.30.9 NMAC;
  - (e) site maintenance activities, if needed, the responsible person proposes to perform after abatement activities terminate;
  - (f) a schedule for the duration of abatement activities, including the submission of summary quarterly progress reports;
  - (g) a public notification proposal designed to satisfy the requirements of Subsections B and C of 19.15.30.15 NMAC; and
  - (h) additional information that may be reasonably required to select, describe, justify and design an effective abatement option.

[19.15.30.13 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.14 OTHER REQUIREMENTS:**

- A. A responsible person shall allow the director's authorized representative upon presentation of proper credentials and with reasonable prior notice to:
  - (1) enter the facility at reasonable times;
  - (2) inspect and copy records an abatement plan requires;
  - (3) inspect treatment works, monitoring and analytical equipment;
  - (4) sample wastes, ground water, surface water, stream sediment, plants, animals or vadose-zone material including vadose-zone vapor;
  - (5) use monitoring systems and wells under the responsible person's control in order to collect samples of media listed in Paragraph (4) of Subsection A of 19.15.30.14 NMAC; and
  - (6) gain access to off-site property the responsible person does not own or control, but is accessible to the responsible person through a third-party access agreement, provided that the agreement allows it.
  
- B. A responsible person shall provide the director, or director's representative, with at least four working days advance notice of sampling to be performed pursuant to an abatement plan, or a well plugging, abandonment or destruction at a facility where the division has required an abatement plan.

C. A responsible person wishing to plug, abandon or destroy a monitoring or water supply well within the perimeter of the three dimensional body where the standards set forth in Subsection B of 19.15.30.9 NMAC are exceeded, at a facility where the division has required an abatement plan, shall propose such action by certified mail to the director for approval, unless the state engineer's approval is required. The responsible person shall design the proposed action to prevent water pollution that could result from water contaminants migrating through the well or bore hole. The proposed action shall not take place without the director's written approval, unless the responsible person does not receive written approval or disapproval within 30 days after the date the director receives the proposal.

[19.15.30.14 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.15 PUBLIC NOTICE AND PARTICIPATION:**

A. Prior to public notice, the applicant shall give written notice, as approved by the division, of stage 1 and stage 2 abatement plans to the following persons:

- (1) surface owners of record within one mile of the perimeter of the geographic area where the standards and requirements set forth in 19.15.30.9 NMAC are exceeded;
- (2) the county commission where the geographic area where the standards and requirements set forth in 19.15.30.9 NMAC are exceeded is located;
- (3) the appropriate city officials if the geographic area where the standards and requirements set forth in 19.15.30.9 NMAC are exceeded is located or is partially located within city limits or within one mile of the city limits;
- (4) those persons, the director identifies, who have requested notification, who shall be notified by mail; (5) the New Mexico trustee for natural resources, and other local, state or federal governmental agencies affected, as the director identifies, which shall be notified by certified mail;
- (6) the governor or president of a tribe, pueblo or nation if the geographic area where the standards and requirements set forth in 19.15.30.9 NMAC are exceeded is located or is partially located within tribal boundaries or within one mile of the tribal boundaries, who shall be notified by certified mail;
- (7) the director may extend the distance requirements for notice if the director determines the proposed abatement plan has the potential to adversely impact public health or the environment at a distance greater than one mile. The director may require additional notice as needed. The applicant shall furnish a copy and proof of the notice to the division.

B. Within 15 days after the division determines that a stage 1 abatement plan or a stage 2 abatement plan is administratively complete, the responsible person shall issue public notice in a division-approved form in a newspaper of general circulation in the county in which the release occurred, and in a newspaper of general circulation in the state. For the purposes of Subsection B of 19.15.30.15 NMAC, an administratively complete stage 1 abatement plan is a document that satisfies the requirements of Subsection C of 19.15.30.13 NMAC and an administratively complete stage 2 abatement plan is a document that satisfies the requirements of Paragraph (2) of Subsection D of 19.15.30.13 NMAC. The public notice shall include, as approved in advance by the director:

- (1) the responsible person's name and address;
- (2) the location of the proposed abatement;
- (3) a brief description of the source, extent and estimated volume of release; whether the release occurred into the vadose zone, ground water or surface water; and a description of the proposed stage 1 or stage 2 abatement plan;
- (4) a brief description of the procedures the director followed in making a final determination;
- (5) a statement that the public may view a copy of the abatement plan at the division's Santa Fe office or at the division's district office for the area in which the release occurred, and a statement describing how the public can access the abatement plan electronically from a division-maintained site if such access is available;
- (6) a statement that the division will accept the following comments and requests for consideration if the director receives them within 30 days after the date of publication of the public notice:
  - (a) written comments on the abatement plan; and
  - (b) for a stage 2 abatement plan, written requests for a public hearing that include reasons why a hearing should be held; and
- (7) an address and phone number at which interested persons may obtain further information.

C. A person seeking to comment on a stage 1 abatement plan, or to comment or request a public hearing on a stage 2 abatement plan, shall file written comments or hearing requests with the division within 30 days after the date of public notice, or within 30 days after the director receives a proposed significant modification of a stage 2 abatement plan. Requests for a public hearing shall set forth the reasons why a hearing should be held. The division shall hold a public hearing if the director determines that there is significant public interest or that the request has technical merit.

D. The division shall distribute notice of an abatement plan's filing with the next division and commission hearing docket following the plan's receipt.

[19.15.30.15 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.16 DIRECTOR APPROVAL OR NOTICE OF DEFICIENCY OF SUBMITTALS:**

A. The director shall, within 60 days after receiving an administratively complete stage 1 abatement plan, a site investigation report, a technical infeasibility demonstration or an abatement completion report approve the document, or notify the responsible person of the document's deficiency, based upon the information available.

B. If the division does not hold a public hearing pursuant to Subsection C of 19.15.30.15 NMAC then the director shall, within 90 days after receiving a stage 2 abatement plan proposal, approve the plan, or notify the responsible person of the plan's deficiency, based upon the information available.

C. If the division holds a public hearing pursuant to Subsection C of 19.15.30.15 NMAC then the director shall, within 60 days after receiving the required information, approve stage 2 of the abatement plan proposal, or notify the responsible person of the plan's deficiency, based upon the information contained in the plan and the information submitted at the hearing.

D. If the director notifies a responsible person of a deficiency in a site investigation report, or in a stage 1 or stage 2 abatement plan proposal, the responsible person shall submit a modified document to cure the deficiencies the director specifies within 30 days after receiving the notice of deficiency. The responsible person is in violation of 19.15.30 NMAC if the responsible person fails to submit a modified document within the required time, or if the responsible person does not in the modified document make a good faith effort to cure the deficiencies the director specified.

E. Provided that the responsible person meets the other requirements of 19.15.30 NMAC and provided further that stage 2 of the abatement plan, if implemented, shall result in the standards and requirements set forth in 19.15.30.9 NMAC being met within a schedule that is reasonable given the site's particular circumstances, the director shall approve the plan.

[19.15.30.16 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.17 INVESTIGATION AND ABATEMENT:** A responsible person who receives the division's approval for stage 1 or stage 2 of an abatement plan shall conduct investigation, abatement, monitoring and reporting activities in compliance with 19.15.30 NMAC and according to the terms and schedules contained in the approved abatement plans.

[19.15.30.17 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.18 ABATEMENT PLAN MODIFICATION:**

A. The division may modify an approved abatement plan at the responsible person's written request in accordance with 19.15.30 NMAC with the director's written approval.

B. If data the responsible person submitted pursuant to monitoring requirements specified in the approved abatement plan or other information available to the director indicates that the abatement action is ineffective, or is creating unreasonable injury to or interference with health, welfare, environment or property, the director may require a responsible person to modify an abatement plan within the shortest reasonable time so as to effectively abate water pollution that exceeds the standards and requirements set forth in 19.15.30.9 NMAC, and to abate and prevent unreasonable injury to or interference with health, welfare, environment or property.

[19.15.30.18 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.19 COMPLETION AND TERMINATION:**

A. The division shall consider abatement complete when the responsible person meets the standards and requirements set forth in 19.15.30.9 NMAC. At that time, the responsible person shall submit an abatement completion report, documenting compliance with the standards and requirements set forth in 19.15.30.9 NMAC, to the director for approval. The abatement completion report also shall propose changes to long term monitoring and site maintenance activities, if needed, to be performed after the abatement plan's termination.

B. Provided that the responsible person meets the other requirements of 19.15.30 NMAC and provided further that the responsible person has met the standards and requirements set forth in 19.15.30.9 NMAC, the director shall approve the

abatement completion report. When the director approves the abatement completion report, the director shall also notify the responsible person in writing that the abatement plan is terminated.

[19.15.30.19 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.20 DISPUTE RESOLUTION:** In the event of a technical dispute regarding the requirements of 19.15.29 NMAC, 19.15.30.9 NMAC, 19.15.30.12 NMAC, 19.15.30.13 NMAC, 19.15.30.18 NMAC or 19.15.30.19 NMAC, including notices of deficiency, the responsible person may notify the director by certified mail that a dispute has arisen, and the responsible person desires to invoke the dispute resolution provisions of 19.15.30.20 NMAC provided that the responsible person shall send the notification within 30 days after the responsible person receives the director's decision that causes the dispute. Upon the notification, the deadlines affected by the technical dispute shall be extended for a 30 day negotiation period, or for a maximum of 60 days if approved by the director for good cause shown. During this negotiation period, the director or the director's designee and the responsible person shall meet at least once. A mutually agreed upon third party may facilitate the meeting, but the third party shall assume no power or authority granted or delegated to the director by the Oil and Gas Act or by the division or commission. If the dispute remains unresolved after the negotiation period, the director's decision shall be final.

[19.15.30.20 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.21 APPEALS FROM DIRECTOR'S AND DIVISION'S DECISIONS:**

A. If the director

- (1) determines that an abatement plan is required pursuant to 19.15.29.11 NMAC;
- (2) approves or provides notice of deficiency of a proposed abatement plan, technical infeasibility demonstration or abatement completion report; or
- (3) modifies or terminates an approved abatement plan the director shall provide written notice of the action by certified mail to the responsible person and other persons who participated in the action.

B. A person who participated in the action before the director and that the action listed in Subsection A of 19.15.30.21 NMAC adversely affects may file a petition requesting a hearing before a division examiner.

C. The person shall make the petition in writing and file it with the division within 30 days after receiving notice of the director's action. The petition shall specify the portions of the action to which the petitioner objects, certify that the person has mailed or hand-delivered a copy of the petition to the director and to the applicant or permittee if the petitioner is not the applicant or permittee and have attached a copy of the action for which the person seeks review. Unless a person makes a timely petition for hearing, the director's action is final.

D. The hearing before the division shall be conducted in the same manner as other division hearings.

E. The petitioner shall pay the cost of the court reporter for the hearing.

F. A party adversely affected by a division order pursuant to a hearing held by a division examiner, shall have a right to have the matter heard de novo before the commission.

G. The appeal provisions do not relieve the owner, operator or responsible person of their obligations to comply with federal or state laws including regulations or rules.

[19.15.30.21 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**HISTORY of 19.15.30 NMAC:**

**History of Repealed Material:** 19.15.1 NMAC, General Provisions and Definitions (filed 04/27/2001) repealed 12/1/08.

**NMAC History:** That applicable portion of 19.15.1 NMAC, General Provisions and Definitions (Section 19) (filed 04/27/2001) was replaced by 19.15.30 NMAC, Remediation, effective 12/1/08.

**Lowe, Leonard, EMNRD**

---

**From:** Weaver, Eric [Eric.Weaver@anadarko.com]  
**Sent:** Wednesday, June 15, 2011 2:13 PM  
**To:** Lowe, Leonard, EMNRD  
**Cc:** Bates, Jack; Dimpel, Jacqueline; Thorson, Arlyn; McClain, Robert  
**Subject:** Pond Closure GW-033  
**Attachments:** Pond Closure SOW.doc

Leonard,

I just wanted to send you an update on the pond closure project. A contractor has been selected and are planned start date is Monday June 27, 2011. We will site orientation with the contractors the first day and start actual work on Tuesday June 28, 2011. Estimated length of time for the project is three weeks, we plan to have the site backfilled and closed by Friday July 15, 2011. I will be on site for the first week and last week to ensure the project gets kicked off and runs as described in the attached work plan. I will also be out the last week to witness the sampling underneath the second liner and oversee the final closure. If there are any questions relating to the project or work plan please contact me, as we will continue on schedule unless we here from you otherwise. Would you like us to contact the local NMOCD rep in Aztec? If so could you please forward his contact information

I will be by your office the week of June 27 to deliver the renewal application on Discharge Permit GW-033. Is there any particular day that works best for you? I look forward to hearing from you on any issues related to this closure project.

Regards

<<Pond Closure SOW.doc>>

*Eric W. Weaver*  
**Anadarko Petroleum**  
Sr.EHS Representative  
(432)684-2808 Office  
(432)413-2494 Cell  
#10 Desta Dr. Ste 650 E  
Midland, TX 79705-0455

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06.15.11



Date: June 14, 2011

Client: Anadarko Petroleum Corporation

Project: Scope of Work for Removal and Closure of Waste Water Evaporation Pond

Location: San Juan River Gas Plant, Kirkland, New Mexico

The following information is to outline the scope of work (SOW) to complete the removal and closure of the existing evaporation pond located at the San Juan River Gas Plant in Kirkland, New Mexico. The San Juan River Plant is located in Section 1, Township 29 North, Range 15 West, San Juan County, New Mexico, approximately eight miles west of Farmington and 1.7 miles north of Kirtland, New Mexico. Highway 550 and County Road 61 provide access to the plant.

The lined impoundment, located at the south end of the plant property, is lined with high density polyethylene (HDPE), and has the following specifications:

Line:	45-mil HDPE on sides, 30-mil HDPE on pond bottom
Dimensions:	250 feet x 250 feet x 4 feet, 4 inches
Volume:	1,650,000 gallons with 1-foot freeboard
Slope:	1.3 slope on sides, 1: 125 slope on pond bottom
Leachate Collection:	Slotted 4-inch PVC drains within 1-foot sand layer
Leak Detection:	Monitoring, wells connected to collection system
Secondary Containment:	6-inch clay liner beneath sand layer

To complete the removal of the evaporation pond, the initial on-site activities will involve the solidification of the liquids remaining within the pond. A cellulose based material will be used to complete the solidification. If additional material is needed to complete the solidification, soil from the site will be used.

After solidification of the waste, the waste will be removed from the pond and stockpiled on plastic in an area located to the north of the pond. All waste will be removed from the pond prior to starting the off-site transportation of the waste. Waste will be shipped to Contract Environmental Services, Inc. in San Juan County, Utah for final disposal.

The top liner will be removed in sections for disposal at Contract Environmental Services along with the solid waste from the pond. After removal of this top liner, the filter media located between the liners will be inspected and analyzed to determine if it is contaminated and should be shipped off-site for disposal or if it can be used as backfill for final closure of the pond. The bottom liner will also be removed and shipped off-site for disposal.

After removal of the bottom liner, the soil underlying the former pond will be gridded in 50 feet by 50 feet grids and sampled for chlorides and total petroleum hydrocarbons. If any grid indicates contamination, that grid will be broken into 10 feet by 10 feet grids and sampled again to narrow the area of contamination.

Based on the clearance sample analytical data the backfilling of the former pond area will be completed by first placing old concrete from the plant site into the bottom of the former pond. The concrete will then be covered with clean fill obtained from Contract Environmental. The backfill will be field screened for chlorides by using a field tab titration kit to verify the levels of chlorides.

A final report documenting the field activities and summarizing the analytical results of the clearance sampling will be completed.

Should you have any questions or need additional information, please contact me at (432) 563-2200.

Prepared by:



Shane Estep  
Etech Environmental & Safety Solutions, Inc.



***DISCHARGE PLAN MODIFICATION APPLICATION***

***WESTERN GAS RESOURCES, INC.***

***SAN JUAN RIVER GAS PLANT***

***SAN JUAN COUNTY, NEW MEXICO***

***Submitted for:***

***Western Gas Resources, Inc.  
1201 Lake Robbins Drive  
The Woodlands, Texas 77380***

***September, 2010***



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***DISCHARGE PLAN MODIFICATION APPLICATION***

***WESTERN GAS RESOURCES, INC.***

***SAN JUAN RIVER GAS PLANT***

***SAN JUAN COUNTY, NEW MEXICO***

*CW-033<sub>Howe</sub>*

***Submitted for:***

***Western Gas Resources, Inc.  
1201 Lake Robbins Drive  
The Woodlands, Texas 77380***

***September, 2010***



***DISCHARGE PLAN MODIFICATION APPLICATION***

***WESTERN GAS RESOURCES, INC.  
SAN JUAN RIVER GAS PLANT  
SAN JUAN COUNTY, NEW MEXICO***

***Date Prepared:***  
September 20, 2010

***Prepared For:***  
State of New Mexico  
Oil Conservation Division

***Prepared on Behalf of:***  
Western Gas Resources, Inc.

A handwritten signature in black ink, appearing to read "Eric W. Weaver", written over a horizontal line.

Eric Weaver  
Sr. Environmental Analyst

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Revised June 10, 2003

Submit Original  
Plus 1 Copy  
to Santa Fe  
1 Copy to Appropriate  
District Office

**DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS,  
REFINERIES, COMPRESSOR, GEOTHERMAL FACILITIES  
AND CRUDE OIL PUMP STATIONS**

(Refer to the OCD Guidelines for assistance in completing the application)

New       Renewal       Modification

1. Type: Natural Gas Processing Plant GW-033

2. Operator: Western Gas Resources, Inc.

Address: 1201 Lake Robbins Drive, The Woodlands, Texas, 77380

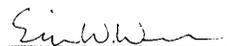
Contact Person: Eric Weaver Phone: (432) 684-2808

3. Location: \_\_\_\_\_ /4 NW /4 Section 1 Township 29N Range 15W  
Submit large scale topographic map showing exact location.

4. Attach the name, telephone number and address of the landowner of the facility site.
5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.
6. Attach a description of all materials stored or used at the facility.
7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.
8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.
9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.
10. Attach a routine inspection and maintenance plan to ensure permit compliance.
11. Attach a contingency plan for reporting and clean-up of spills or releases.
12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
14. CERTIFICATION I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Eric Weaver

Title: Senior Environmental Analyst

Signature: 

Date: September 20, 2010

E-mail Address: eric.weaver@anadarko.com

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## EXECUTIVE SUMMARY

Western Gas Resources Inc. (WGR), 1201 Lake Robbins Drive, The Woodlands, TX 77380, submits this Discharge Plan modification application, dated August, 2010, for the San Juan River Gas Plant located in Kirtland, San Juan County, New Mexico. The current discharge plan, GW-033, expires on December 29, 2011. The only significant changes to the plant since the permit renewal in 2006 is the addition of the Acid Gas Injection (AGI) well and supporting equipment.

As part of the new AGI system the acid gas from the amine treater will be routed to compression for down-hole injection and sequestration rather than going to the sulfur recovery unit. An approved C-108 allows acid gas injection into the Entrada formation.

Total production of wastewater, both contact and non-contact, is expected to be approximately 655,000 gallons per year. The non-contact wastewater consists of condensed steam from the sulfur recovery unit, hydrostatic test water, cooling tower blow-down, and boiler blow-down. The condensed steam from the sulfur recovery unit and the hydrostatic test water are exempt from RCRA Subtitle C regulations. The boiler blow-down is considered non-hazardous due to the non-hazardous nature of the process that produces the wastewater. With the start up of the AGI system the condensed steam from the sulfur recovery unit will no longer be a factor in daily non-contact water blow-down as the plant will be purged and retired in place.

Except for a low volume of laboratory wastewater, the contact wastewater stream is exempt from RCRA Subtitle C regulations. The laboratory wastewater is not a hazardous waste, based on its characteristics and laboratory analytical data.

WGR discharges the total wastewater stream to a double lined evaporation pond. There are no effluent discharges direct to ground, surface waters, or to unlined ponds. The lined impoundment, located at the south end of the plant property, is lined with high density polyethylene (HDPE) and has been in use since its construction in 1987.



## **1.0 GENERAL INFORMATION**

### **1.1 *Western Gas Resources Representatives***

Local Representative:

Kent McEvers  
Operations Superintendent  
P.O. Box 70  
Kirtland, New Mexico 87417  
(505) 598-5601

Technical Representative:

Eric Weaver  
Anadarko Petroleum Corporation  
#10 Desta Drive Suite 650 E  
Midland, Texas 79705  
(432)684-2808

### **1.2 *Location of Discharges***



The San Juan River Plant is located in Section 1, Township 29 North, Range 15 West, San Juan County, New Mexico, approximately eight miles west of Farmington and 1.7 miles north of Kirtland, New Mexico. Highway 550 and County Road 61 provide access to the plant.

The land to the north and west of the plant site is publicly owned. Approximately thirty private parties own tracts located south and east of the plant.

### **1.3 *San Juan River Plant Operations***

Current activities at the San Juan River Plant include natural gas sweetening, gas compression, gas dehydration, sulfur recovery, liquid storage, and operation of plant utilities. These utilities include steam producing boilers and a cooling water system. The cooling water system is only operated during the warm weather months as a trim cooler; therefore, the wastewater generated by the cooling system blow-down is produced only during those months of warm weather operation.

### **1.4 *Proposed changes to system with the introduction of Acid Gas Injection (AGI)***

The acid gas from the amine treater will be routed to compression for down-hole injection and sequestration rather than going to the sulfur recovery unit. An approved C-108 allows acid gas injection into the Entrada formation. The details of this program are available online on the OCD website included with the issued C-108. (See attached diagrams for facility layout)

#### **1.4.1 Modification Benefits to the discharge plan by implementing AGI**

- Shutting down and retiring of the sulfur recovery unit. This will eliminate the potential discharge of sulfur and sulfur byproducts.
- There will be no more steam, steam condensers and blow-down from the many heat exchangers that are associated with an SRU.
- There will be no SO<sub>2</sub> emissions from the incinerator unless the plant is in a scheduled, routine or emergency maintenance of the acid gas injection equipment.
- Transportation of molten sulfur to the rail-site in Gallup New Mexico over some of the busiest roads in the state will cease.
- We will be able to close down our rail-site and car/sulfur storage along one of the busiest railroads in the country. This will also enable us to stop rail car loading and moving onto the main rail system.
- This project will also reduce air quality emissions of CO<sub>2</sub> and SO<sub>2</sub> by sequestering the CO<sub>2</sub> and H<sub>2</sub>S into a trapped zone (see C-108 application).

#### **1.4.2 Project Impacts**

- A new cooling tower with a 960 gallon water capacity will be installed to control the inlet and inter-stage temperatures of the AGI compression. This will require periodic blow-downs to the evaporation pond. Estimated volumes are 10 bbls per event.
- Three (3) 450 hp Caterpillar acid gas injection compressors will be installed. Skid drainage will be to OCD specifications.
- For scheduled maintenance and emergency events, acid gas will be routed to the flare or incinerator for destruction/combustion.
- The only new underground lines added will be the injection and return line to the AGI well.
- (See attached diagrams)

#### **1.4.3 Added Equipment**

- Cooling tower skid with associated pumps.
- Three (3) 450 hp compressor units with 30 gallon slop oil blow pots.
- One (1) 500 gallon antifreeze tank.
- One (1) 500 gallon motor oil tank.
- One (1) 1,000 gallon lube oil tank.
- One (1) 500 gallon nitrogen / compressor air tank.

## 2.0 PLANT PROCESSES

### 2.1 Sources and Quantities of Effluent and Process Fluids

The source of the San Juan River Plant's water is the Lower Valley Water Users Association.. Approximately 15,000 gallons of high-quality water are purchased daily from the association.

Contact water (process water that has contacted hydrocarbon streams) is generated at a rate of approximately 150 gallons per day by the following sources:

- Dehydration unit and triethylene glycol (TEG) regeneration – Regeneration of TEG by natural gas dehydration units creates a wastewater stream. This stream is considered to be an exempt waste in accordance with RCRA Subtitle C regulations listed in 40 CFR 261.4(b)(5). The various exempt waste streams are listed in the May 1995 EPA document number EPA530-K-95-V003.
- Amine reflux and gas inlet – Contact wastewater is produced at the amine reflux and gas inlet vessels. These streams are also considered to be exempt wastes in accordance with RCRA Subtitle C regulations listed in 40 CFR 261.4(b)(5). The various exempt waste streams are listed in the May 1995 EPA document number EPA530-K-95-V003.

Wastewater is produced by laboratory tests performed at the plant. The tests are performed to determine the content of H<sub>2</sub>S extracted from the gas sample. The waste consists of small amounts of water, ¼% iodine, H<sub>2</sub>S extracted from the gas sample, sulfuric acid, and/or hydrochloric acid. No more than one quart per month of the iodine or acids each are used. The laboratory wastewater stream volume is low and the stream is considered to be a non-exempt waste in accordance with 40 CFR 261.4(b) (5).

In 1996, the typical laboratory wastewater stream was collected in a clean 5-gallon pail and a grab sample was retrieved for analyses of hazardous waste characteristics (ignitability, corrosivity, reactivity, and toxicity). The sample results indicated that this waste is not characteristically hazardous. A copy of the 1996 Laboratory analytical results is included in Appendix A. This waste is also not a listed hazardous waste in the RCRA regulations.

The laboratory wastewater stream is commingled with the contact wastewater streams. The commingled wastewater stream is considered to be an exempt waste according to RCRA Subtitle C, since the non-exempt waste does not indicate hazardous characteristics prior to commingling and since the contact wastewater streams are considered to be exempt. The mixture rule is also discussed in the EPA document number EPA530-K-95-V003.

Non-contact wastewater is currently produced at an average rate of 1,440 gallons per day. The non-contact water streams consist of the following:

- Boiler blow-down – Two boilers produce steam for the amine unit and other process requirements. Periodic blow-down is required to reduce total dissolved solids (TDC). This stream is routed through a sump and subsequently to the cooling tower. This stream is not a

RCRA listed hazardous waste and is considered non-hazardous based on process knowledge. Periodic in-plant tests performed for pH and conductivity also demonstrate that this waste stream does not exhibit characteristics for corrosivity.

- Cooling tower blow-down – An evaporative cooling tower is used to cool water for gas plant processes. Much of the water is recycled, but some periodic blow-down is required to avoid exceeding operating limits for TDS, phosphates, and hardness. Variation in the blow-down rate will occur during the year due to the seasonal operation of the cooling tower system. Cooling tower blow-down in gas production is considered as an exempt waste in accordance with 40 CFR 261.4(b)(5) and is listed in the EPA document number EPA530-K-95-V003.
- Due to the addition of the AGI compressors an additional cooling tower will be added, increasing the amount of daily non-contact blow-down water. An evaporative cooling tower is used to cool water for acid gas leaving the compressor.. Much of the water is recycled, but some periodic blow-down is required to avoid exceeding operating limits for TDS, phosphates, and hardness. Variation in the blow-down rate will occur during the year due to the seasonal operation of the cooling tower system. Cooling tower blow-down in gas production is considered as an exempt waste in accordance with 40 CFR 261.4(b)(5) and is listed in the EPA document number EPA530-K-95-V003.
- Sulfur recovery plant – Wastewater condensed from the sulfur recovery treatment plant is periodically generated in low volumes. This stream is considered to be an exempt waste in accordance with 40 CFR 261.4(b)(5). This is referenced specifically as gas plant sweetening wastes for sulfur removal. **This waste stream will no longer be a factor in daily non-contact water blow-down as the plant will be purged and retired in place.**
- Hydrostatic test wastewater is periodically generated during plant maintenance and construction operations. Hydrostatic test wastewater is considered to be exempt waste in accordance with 40 CFR 261.4(b)(5). Disposal of this water is made directly to the double lined evaporation impoundment.

A summary of the expected annual wastewater discharge volumes is presented below:

Annual Wastewater Discharge Estimation	
Contact water to lined impoundment	55,000 gallons
Non-contact water to lined impoundment	600,000 gallons
Total expected wastewater discharge	655,000 gallons

A site plot plan and a process flow sheet are included in Appendix B.

## 2.2 Wastewater Characteristics

The non-contact wastewater stream is commingled with the contact wastewater stream in a large sump and then routed to the double lined impoundment. Wastewater characteristics will vary depending upon the ratio of contact to non-contact water being discharged to the impoundment at any given time. More non-contact wastewater is produced during the warm weather months than during cooler months, due to the operation of the cooling tower system.

The following analytical results were obtained from grab samples taken at the lined pond on April 16, 1991, November 6, 1996 and September 2010. WGR also obtained grab samples of the lab waste, contact, and non-contact wastewaters during November, 1996. Results of the sample analytical data are presented in the following summary tables:

<b>BTEX ANALYTICAL RESULTS (mg/L)</b>				
<b>CONSTITUENT</b>	<b>April 16, 1991</b>	<b>November 1996</b>	<b>September 2010</b>	<b>WQ STDS</b>
Benzene	0.056	0.254	0.144	0.01
Toluene	0.013	0.866	0.538	0.75
Ethylbenzene	0.0055	0.031	0.0664	0.75
Total Xylenes	0.0082	0.338	0.856	0.62

<b>CATION/ANION ANALYTICAL RESULTS (mg/L)</b>			
<b>CONSTITUENT</b>	<b>April 16, 1991</b>	<b>November 1996</b>	<b>September 2010</b>
Calcium	840	182	27
Magnesium	780	553	4.88
Potassium	99	1182	0.950
Sodium	16,500	16,928	852
Chloride	28,600	10,450	270
Sulfate	619	2189	<0.01

## 2.3 Wastewater Management

All wastewater streams are collected in the contact wastewater sump located on the north side of the gas plant. The sump is constructed of steel and is approximately 10 feet deep. The sump is equipped with a plastic liner to prevent corrosion. Wastewater is pumped from the sump to the evaporation impoundment located on the south side of the gas plant.

The boiler blow-down stream is collected in a concrete sump that is located in the boiler house. From there, it is transferred to the cooling tower. The commingled cooling tower blow-down and boiler blow-down streams are transferred to the contact wastewater sump.

The storm drain sump is located east of the amine treating unit and west of the control room. In addition to collecting storm water runoff, the sump is used to drain process filters prior to disposal. The sump is constructed of concrete. Liquids collected in the sump are pumped to the contact wastewater sump.

Wastewater is transferred from the contact wastewater sump to the evaporation impoundment via underground piping. A hydrocarbon separation tank (oil/water separator) is located at the impoundment.



The wastewater flows through the separation tank prior to discharge to the impoundment. The separation tank is visually monitored in order to determine when a transport subcontractor should be called to remove the hydrocarbons. The hydrocarbons collected in the separation tank are transported off-site for recycling.

There is no discharge of wastewater to ground, surface water, or to unlined impoundments. Details concerning the evaporation impoundment are provided in Section 3.1.

Used compressor engine oil, antifreeze, produced water, and other fluid wastes associated with plant operations are not combined with the wastewater streams. These fluids are collected in drums or atmospheric storage tanks to prevent their migration into the environment.

## **2.4 *Spill/Leak Prevention and Housekeeping Procedures***

A copy of the Spill Prevention Control and Countermeasure Plan (SPCC) is included in Appendix C. The spill/leak prevention and housekeeping procedures are discussed in the following sections.

### **2.4.1 Monitoring of Wastewater Disposal Systems**



The wastewater handling and disposal system includes adequate provisions for detection of equipment and liner leaks. The contact wastewater sump (Well #6) and evaporation impoundment (Wells #1 and #2) are equipped with monitoring wells for the detection of leaks. The wells are monitored weekly for the presence of liquids. Monitoring records are maintained at the plant office.

Construction details for the evaporation impoundment are provided in Section 3.1 and in Appendix B. The pond berms and exposed portions of the liner are inspected weekly. As discussed above, the leak detection system monitoring wells are also inspected weekly.

In accordance with the current Discharge Plan approval, all sumps at the plant are inspected annually. Inspection reports are maintained at the plant office and are submitted to the Oil Conservation Division. The current Discharge Plan approval also requires that all below ground process and wastewater lines be tested to demonstrate mechanical integrity at least every five years. The below ground lines at plant were subjected to pressure tests during the period of August 22 to November 21, 2008.

### **2.4.2 Protection from Spills and Leaks**

WGR acts responsibly to avoid spills and leaks that might harm the environment. Plant personnel are aware of the imperative nature of spill prevention. Housekeeping measures require prompt identification of leaks, drips and spills.

The San Juan River Gas Plant property is enclosed by a fence to minimize trespassing. With the exception of limited Y-grade natural gas liquid storage east of the plant yard, there is no large scale processing or storage of hydrocarbons at the plant. Therefore, large spills of hydrocarbons are unlikely.

WGR utilizes two concrete storage basins (basin "A" and "B") for the storage of hazardous materials. The basins were previously used as containment for cooling towers that have been dismantled and removed.

The following substances are stored in basin "A" in quantities of 500 gallons or less: solvent, gasoline, and diesel fuel. Methanol is also stored in basin "A" at a quantity of 1000 gallons or less. The basin walls are high enough to adequately contain the contents of a ruptured tank.

WGR uses the concrete basin "B" beneath the tower as a drum storage area. Empty drums are also stored in this area. Drums are not likely to be disturbed since they are located away from normal work areas.

WGR stores cooling tower and boiler chemicals inside plant buildings on concrete floors. Accidental spills of these chemicals onto the building floors are promptly cleaned up.

In April, 1999 WGR implemented the use of four aboveground pressurized storage tanks. Three 40,000-gallon "bullet" type tanks are located east of the plant yard and are used for the storage of Y-grade natural gas liquids. Storage of the Y-grade NGL is intermittent, since the material is usually pumped directly to a liquids pipeline. Y-grade liquid product is considered to be a gas at ambient conditions. Therefore, the tanks are not equipped with secondary containment.

The fourth tank is a 17,000-gallon pressurized tank that is used to receive pipeline pigging liquids. The tank is equipped with a berm and a 30-mil liner for containment of spills.

Additional storage tanks at the facility include those used for the storage of produced water, amine, triethylene glycol, and used and new refined oils. As required by SPCC regulations, tanks are provided with secondary containment and are designed to prevent leaks and spills. Additional details are provided in the SPCC plan that is attached at Appendix C.

### 2.4.3 Spill Response Measures

WGR procedures require prompt attention to releases of hydrocarbons and hazardous materials. The following substances are present at the plant site and could potentially be released to the environment:

- Refined hydrocarbons such as engine oil, diesel fuel, and gasoline
- Chemicals such as sulfuric acid, boiler and cooling tower chemicals, amine, and triethylene glycol
- Plant products and by-products, including natural gas liquids, produced water, pigging sludge, sulfur, contact wastewater, and non-contact wastewater

WGR will respond to a spill in accordance with the facility SPCC plan, which is included as Appendix C. Generally, the following procedures will be followed:

- 1) Plant employees will implement appropriate response measures and will report the spill to the Operations Superintendent.
- 2) The Operations Superintendent will notify WGR Environment Engineering staff in Midland, Texas. The Environmental Engineering staff will determine whether the spill is reportable to any regulatory agencies and, if so, submit the required reports.
- 3) Under the direction of the Operations Superintendent, plant personnel will implement appropriate cleanup measures. If requested, Environmental Engineering will provide guidance and oversight.

Absorbent pads and booms are available at the plant site, although the site location makes a discharge to surface water highly unlikely. In the event of a discharge to land, shovels and sand are available for cleanup. Contaminated materials will be handled according to applicable environmental regulations. See Section 3.3 for discussion of solid waste disposal.

## 3.0 WASTEWATER AND SOLID WASTE DISPOSAL

There is no discharge of wastewater to surface or ground water at the San Juan River Gas Plant. Plant practices are not expected to threaten surface or ground water quality.

### 3.1 On-site Facilities

The combined contact and non-contact wastewater streams flow through an oil/water separator and to a lined evaporation pond that includes a leak detection/leachate collection system.

The lined impoundment, located at the south end of the plant property, is lined with high density polyethylene (HDPE), and has the following specifications:

Line:	45-mil HDPE on sides, 30-mil HDPE on pond bottom
Dimensions:	250 feet x 150 feet x 4 feet, 4 inches
Volume:	773,000 gallons with 1-foot freeboard
Slope:	1.3 slope on sides, 1: 125 slope on pond bottom
Leachate Collection:	Slotted 4-inch PVC drains within 1-foot sand layer
Leak Detection:	Monitoring, wells connected to collection system
Secondary Containment:	6-inch clay liner beneath sand layer

This impoundment has been in use since its construction in 1987.

The pond design is shown on Figures 2B and 2C, which are included in Appendix B. The pond is configured with a leak detection/leachate collection system that is inspected monthly. The leachate collection system consists of slotted four-inch PVC Schedule 80 piping buried within a one-foot sand layer directly beneath the HDPE liner. A six-inch layer of compacted clay location directly beneath the sand layer prevents migration of contaminants into the subsurface. The leak detection system consists of two monitoring wells, which are directly connected to the leachate collection piping.

Annual discharge to the pond is expected to be 655,000 gallons. Of this total, 55,000 gallons is contact water. Non-contact water contributes the remaining 600,000 gallons of total discharge. The pond has a significantly grater capacity than is currently required for the annual wastewater discharge. A substantial portion of the pond bottom is dry throughout much of the year. A minimum freeboard of one foot is to be maintained.

On occasion, disposal of pipeline hydrostatic test water is necessary. Disposal of hydrostatic test water is expected to occur no more than twice annually. The water will be discharged to the evaporation pond.

As discussed in Section 2.3, the commingled wastewater stream is routed through an oil/water separator upstream of the evaporation pond. Oil recovery in small quantities is expected. Use of the separator enhances oil recovery and promotes evaporation in the lined pond by preventing an oil film from forming on the liquid surface. Removal of trace hydrocarbons will also help to alleviate the possibility of damage to bird life. The pond is netted in accordance with NMOCD regulations.

### **3.2 *Off-site Disposal – Wastewater***

Wastewater produced at the San Juan Plant is not routinely disposed of off-site. As a contingency measure, in the unlikely event that effluent volumes exceed the capacity of the pond, the water could be transported to a permitted Class II disposal well, since the wastewaters have been deemed exempt from RCRA Subtitle C. Approval of the well operator and the NMOCD would be obtained prior to disposal of wastewater at an off-site disposal well.

### **3.3 *Solid Wastes***

Solid wastes generated at the San Juan River Gas Plant are generally exempt from RCRA hazardous waste regulations. They are managed in accordance with 19.15.9.712 NMAC. WGR uses Waste Management's landfill facility located in Cortez, Colorado for disposal of most gas plant waste materials. Pipeline pigging sludge is shipped to Envirotech Inc. facilities for landfarming. Other plant wastes such as office trash are shipped to the San Juan County Regional Landfill. Listed below are NMOCD Rule 712 wastes that are shipped off-site disposal:

712 D. (1) Wastes:

- Empty and RCRA-clean barrels, 5-gallon buckets, and 1-gallon containers
- Uncontaminated construction debris
- Uncontaminated concrete
- Non-friable asbestos and asbestos-containing materials
- Uncontaminated elemental sulfur
- Office trash
- Paper and empty paper bags
- Soiled rags or gloves that pass Paint Filter Test
- Uncontaminated wood pallets

712 D. (2) Wastes:

- Activated alumina
- Activated carbon
- Amine filters
- Gas condensate filters
- Glycol filters
- Junked pipes, valves, and metal pipe
- Molecular sieve
- Pipe scale and other deposits removed from pipeline and equipment
- Oil filters

712 D. (3) Wastes:

- Sulfur contaminated soil
- Contaminated soil other than petroleum contaminated soil
- Petroleum contaminated soil
- Demolition debris not otherwise specified
- Contaminated elemental sulfur
- Other wastes as applicable, including mole sieve dust filters and cryogenic skid inlet gas filters

### **3.4 Recycled Materials**

Approximately 10,500 gallons of used lubricating oil are produced at the plant per year. The used oil is stored in Tank TK-8901, which is located east of the Compressor Building. The used oil is transported to an off-site recycling facility.

## 4.0 SITE

The physical characteristics of the plant site have been studied in detail as part of a previously completed land application feasibility study completed in 1986 and 1987. Detailed information concerning site soil and ground water characteristics are presented in the Phase I and II feasibility study reports, and should be consulted if more specific information is required than provided in the following summary.

### 4.1 *Hydrologic Features*

Surface water run-off from the plant site is expected to follow the local topographic contours. The topography slopes to the northwest across the majority of the site, although a south-southeasterly slope is apparent in the southeastern portion of the site. The topographic gradient across most the site is relatively flat (on the order of 0.01 feet/foot), with the exception of moderate to steep topographic gradients encountered on the flanks of Flare Hill. The infiltration rate of the majority of the surficial deposits is high (Sheppard soil = 8.9 in/hr). Therefore, large-scale overland flow of surface runoff is not anticipated to occur under all but the most extreme storm or flood events.

Surface water bodies within a one-mile radius of the site include 1) the Stevens Arroyo (0.2 miles west), 2) the Farmers Mutual Ditch (0.5 miles south), and 3) small fresh water ponds located on the golf course south of the site. The Stevens Arroyo is an intermittent watercourse. The San Juan River is located greater than one mile south of the plant site.

Based on New Mexico State Engineer well records, ground water wells in the areas are generally completed within the shallow alluvial aquifer at approximately 75 feet below ground surface and are permitted for "domestic" water usage. Ground water is anticipated to discharge as a seep approximately 0.75 miles south of the site where the base of the alluvial aquifer is exposed.

Shallow ground water is contained within alluvial terrace gravel deposits beneath the site. The alluvial sediments are underlain by greenish grey sediments of the Lower Shale Member of the Kirtland Shale. The Kirtland Shale is exposed in the extreme northern and western portions of the site, and approximately 0.5 miles south of the site. The thickness of the alluvial sediments varies from zero feet in the extreme northern and western portions of the site, to greater than 70 feet in the southern and eastern portions of the site. Depth to ground water varies across the site. It is estimated to be less than 10 feet below the surface in the extreme northern and western portions of the site where the alluvial sediments are thin to nonexistent and greater than 50 feet in the extreme southern and eastern portions of the site. Regional ground water flow is to the southwest beneath the majority of the site, with local south to southeasterly flow in the southeast portion of the site.

### 4.2 *Surface and Groundwater Quality*

Groundwater samples from on-site monitoring wells and off-site local wells were analyzed for various water quality parameters as part of the Phase I and II feasibility study in 1987. Results of these analyses indicate that WQCC standards for TDS, sulfate, and manganese are exceeded in on-site wells. TDS,

sulfate, and chloride content exceed WQCC standards in all off-site wells. The average TDS for on-site wells is 4,500 mg/L and is 2,775 mg/L for local wells.

Background ground water quality can be assessed from water quality data obtained from the Daley well (the only local well not located down gradient from the plant site). It is interesting to note that the TDS concentration in the Daley well (4,300 mg/L) is higher than that of the local wells located down gradient of the plant site and is near the average TDS concentration for on-site wells (4,500 mg/L). This fact, in conjunction with the high chloride concentrations in the Daley well, suggests that background water quality is comparable to that beneath the plant site.

Surface water quality samples have been obtained from the Stevens Arroyo located west of the plant site. Background water quality from Stevens Arroyo reportedly exceeds 10,000 mg/L for TDS and, therefore, exceeds the WQCC limit for surface water.



## **5.0 CLOSURE PLAN COMMITMENT**

WGR will commit to the preparation of a closure plan in accordance with the New Mexico Water Quality Control Commission regulation number 3107A.11. At this time, WGR has no plans to close the existing evaporation pond or the facility.

**FIGURE 1 - SITE PLAN**





**FIGURE 2 - AERIAL BOUNDARY MAP**



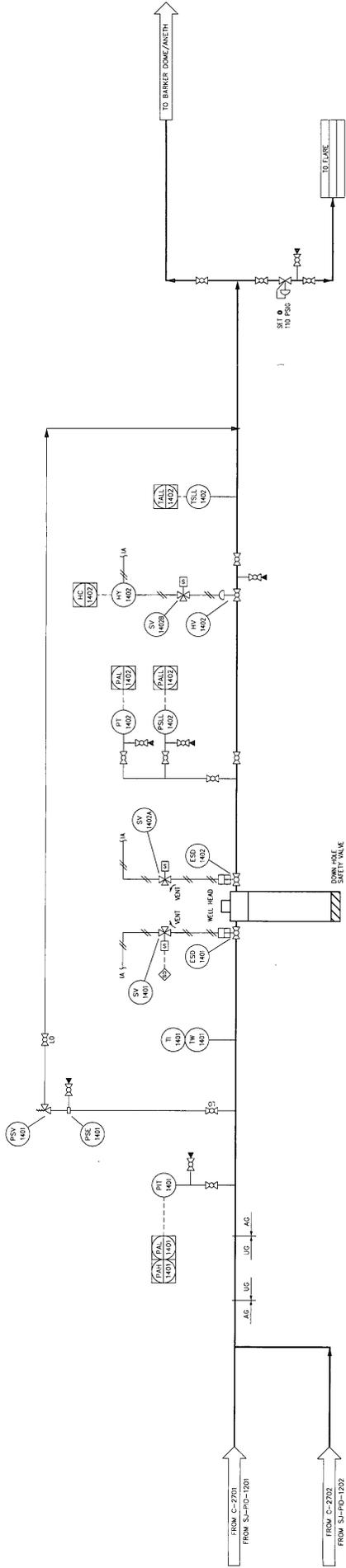
  
**Aurifer**  
 Professional Corporation  
 San Juan Gas Plant  
 San Juan Co. NM  
 Projection: NAD 1983 StatePlane  
 Ignoring Eastings 101  
 Author: Inna Fridman  
 Scale: 1:4,464  
 Date: 8/2/2010

--- = SAN JUAN GAS PLANT PROPERTY BOUNDARY

**FIGURE 3 – PROCESS FLOWSHEET**







**KARUNA VENTURES LLC**  
 10000 S. W. 10th St., Suite #200, Denver, CO 80021  
 303-451-7237

**GWD DESIGN INC.**  
 851 17th St., Suite #200, Denver, CO 80202

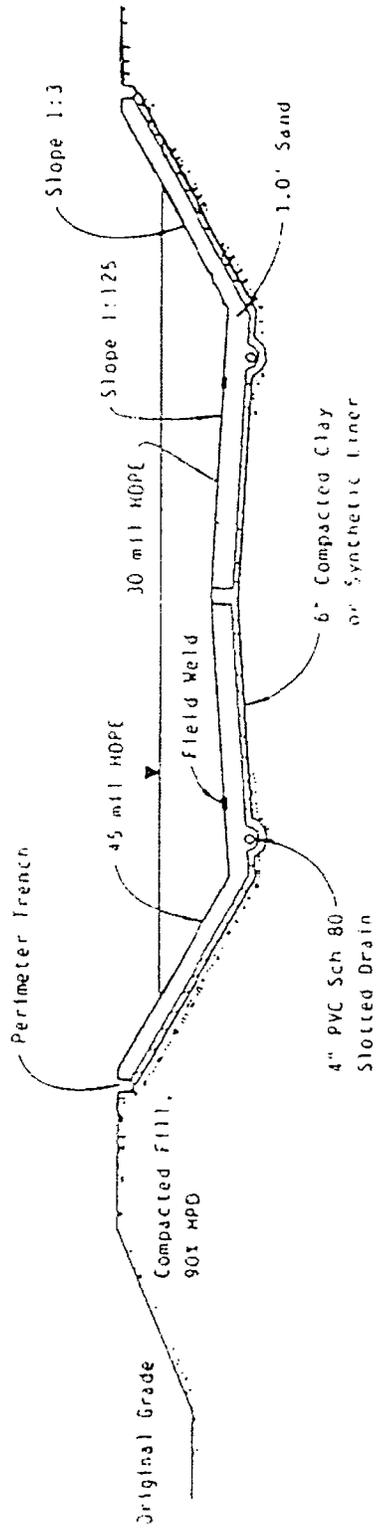
**Anadarko**  
 Petroleum Corporation  
 SAN BLM SLES PLANT  
 PIPING AND INSTRUMENTATION DRAWING  
 WELL HEAD

FILE NUMBER: SJA-PID-1401  
 SCALE: NONE  
 DRAWING NUMBER: SJA-PID-1401

REVISED	DATE	BY	CHKD	DATE
1/2	7/17/09			
1/2	7/20/09			

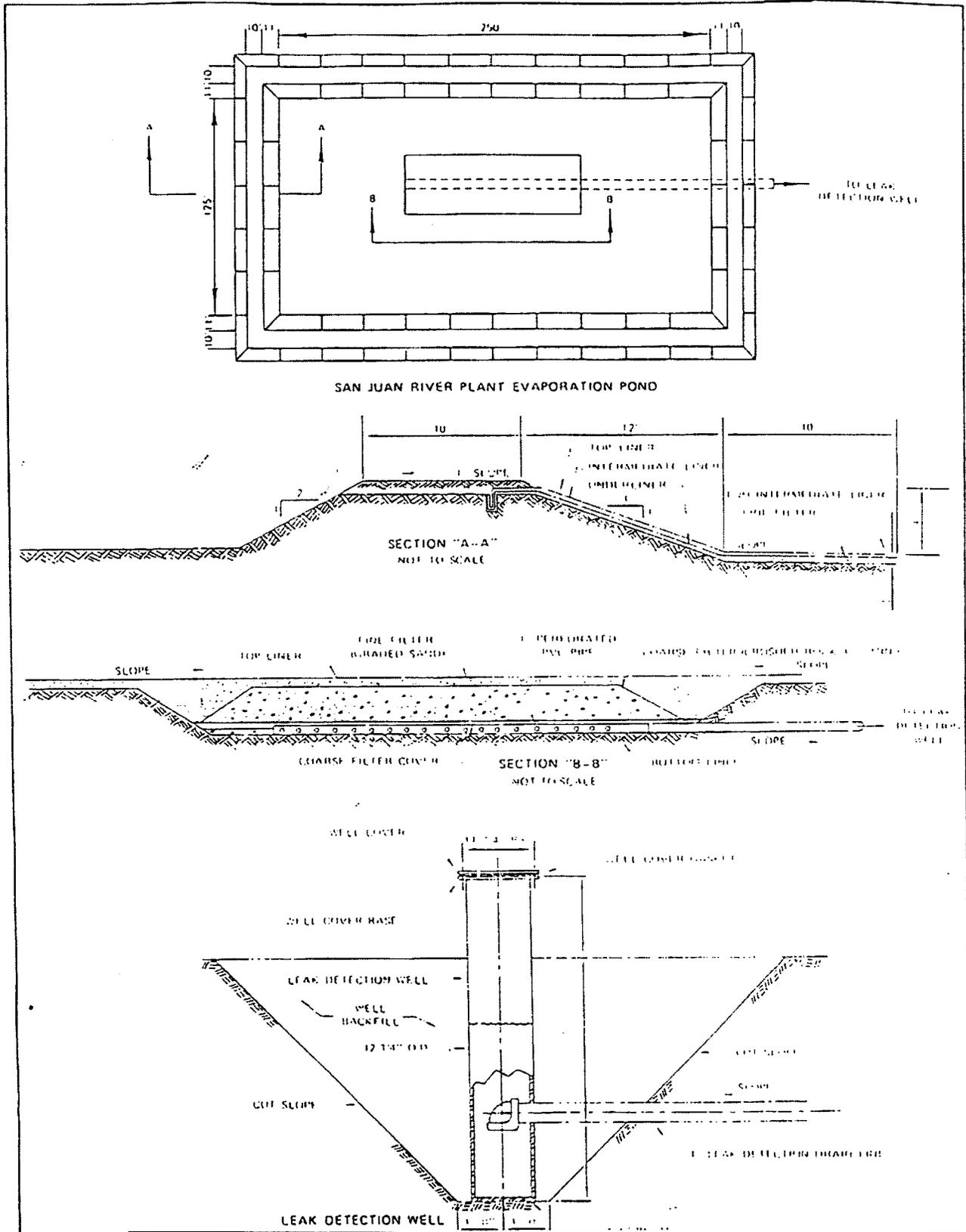
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**FIGURE 4 – EVAPORATION POND DESIGN FIGURE 2B**



<p style="text-align: center;"><b>DISCHARGE PLAN</b></p> <p style="text-align: center;"><b>WESTERN GAS RESOURCES, INC.</b>  <b>SAN JUAN RIVER PLANT</b>          San Juan County, New Mexico</p> <p style="text-align: center;">September, 1991</p> <p style="text-align: center;">Modified from          El Paso Natural Gas Company          Discharge Plan</p>	<p style="text-align: center;">EVAPORATION POND DESIGN</p> <p style="text-align: center;">Figure 2B</p> <p style="text-align: center;">Scale: None</p>
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**FIGURE 5 - EVAPORATION POND DESIGN FIGURE 2C**



<p align="center"> <b>DISCHARGE PLAN</b>  <b>WESTERN GAS RESOURCES, INC.</b>  <b>SAN JUAN RIVER PLANT</b>          San Juan County, New Mexico          September, 1991       </p>	<p align="center"> <b>EVAPORATION POND DESIGN</b>           Figure 2C       </p>
<p align="center">         Modified from          El Paso Natural Gas Company          Discharge Plan       </p>	<p align="center">         Scale: None       </p>

**APPENDIX A - ANALYTICAL RESULTS**



**EPA METHOD 8015 Modified  
Nonhalogenated Volatile Organics  
Total Petroleum Hydrocarbons**

Client:	Anadarko	Project #:	92187-0008
Sample ID:	Inlet Water to Pond South	Date Reported:	09-08-10
Laboratory Number:	55790	Date Sampled:	09-07-10
Chain of Custody No:	10310	Date Received:	09-07-10
Sample Matrix:	Aqueous	Date Extracted:	09-07-10
Preservative:	Cool	Date Analyzed:	09-08-10
Condition:	Intact	Analysis Requested:	8015 TPH

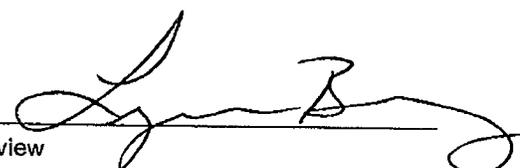
Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	1.3	0.2
Diesel Range (C10 - C28)	ND	0.1
Total Petroleum Hydrocarbons	1.3	

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **San Juan River Plant**

  
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Analyst

  
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Review



**EPA Method 8015 Modified  
Nonhalogenated Volatile Organics  
Total Petroleum Hydrocarbons**

**Quality Assurance Report**

Client:	QA/QC	Project #:	N/A
Sample ID:	0908TBLK QA/QC	Date Reported:	09-08-10
Laboratory Number:	55790	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-08-10
Condition:	N/A	Analysis Requested:	TPH

	I-Cal RF:	C-Cal RF:	% Difference	Accept Range
Gasoline Range C5 - C10	1.0000E+000	9.9800E-001	0.20%	0 - 15%
Diesel Range C10 - C28	1.0000E+000	9.9800E-001	0.20%	0 - 15%

Blank Conc. (mg/L)	Concentration	Detection Limit
Gasoline Range C5 - C10	0.8	0.2
Diesel Range C10 - C28	5.1	0.1
Total Petroleum Hydrocarbons	5.9	

Duplicate Conc. (mg/L)	Sample	Duplicate	% Difference	Accept Range
Gasoline Range C5 - C10	1.3	1.2	7.7%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

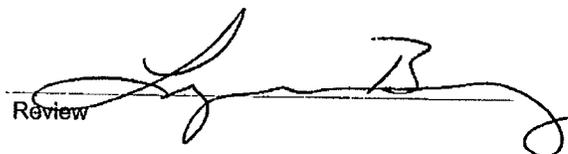
Spike Conc. (mg/L)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	1.3	25.0	27.1	103%	75 - 125%
Diesel Range C10 - C28	ND	25.0	25.0	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for Sample 55790

  
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**EPA METHOD 8021  
AROMATIC VOLATILE ORGANICS**

Client:	Anadarko	Project #:	92187-0008
Sample ID:	Inlet Water to Pond South	Date Reported:	09-08-10
Chain of Custody:	10310	Date Sampled:	09-07-10
Laboratory Number:	55790	Date Received:	09-07-10
Sample Matrix:	Aqueous	Date Analyzed:	09-07-10
Preservative:	Cool	Analysis Requested:	BTEX
Condition:	Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	144	1	0.2
Toluene	538	1	0.2
Ethylbenzene	66.4	1	0.2
p,m-Xylene	664	1	0.2
o-Xylene	192	1	0.1
<b>Total BTEX</b>	<b>1,600</b>		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	fluorobenzene	98.1 %
	1,4-difluorobenzene	104 %
	4-bromochlorobenzene	99.0 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **San Juan River Plant**

Analyst

Review



**EPA METHOD 8021  
AROMATIC VOLATILE ORGANICS  
QUALITY ASSURANCE REPORT**

Client:	N/A	Project #:	N/A
Sample ID:	0907BBLK QA/QC	Date Reported:	09-08-10
Laboratory Number:	55788	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-07-10
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff:	Blank Conc	Detect. Limit
		Accept. Range 0 - 15%			
Benzene	7.6647E+006	7.6877E+006	0.3%	ND	0.2
Toluene	4.2257E+006	4.2384E+006	0.3%	ND	0.2
Ethylbenzene	3.2634E+006	3.2733E+006	0.3%	ND	0.2
p,m-Xylene	7.4980E+006	7.5205E+006	0.3%	ND	0.2
o-Xylene	2.5141E+006	2.5217E+006	0.3%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	495	492	0.7%	0 - 30%
Toluene	1560	1550	0.7%	0 - 30%
Ethylbenzene	133	129	2.9%	0 - 30%
p,m-Xylene	766	757	1.2%	0 - 30%
o-Xylene	333	321	3.6%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	495	50.0	547	100%	39 - 150
Toluene	1560	50.0	1610	100%	46 - 148
Ethylbenzene	133	50.0	213	116%	32 - 160
p,m-Xylene	766	100	804	92.8%	46 - 148
o-Xylene	333	50.0	383	99.8%	46 - 148

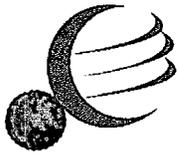
ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.  
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QG for Samples 55788-55790

Analyst

Review



Client:	Anadarko	Project #:	92187-0008
Sample ID:	Inlet Water to Pond South	Date Reported:	09-08-10
Laboratory Number:	55790	Date Sampled:	09-07-10
Chain of Custody:	10310	Date Received:	09-07-10
Sample Matrix:	Aqueous	Date Analyzed:	09-08-10
Preservative:	Cool		
Condition:	Intact		

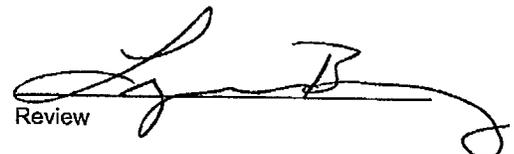
Parameter	Analytical Result	Units
pH	8.17	s.u.
Conductivity @ 25° C	2,780	umhos/cm
Total Dissolved Solids @ 180C	1,990	mg/L
Total Dissolved Solids (Calc)	2,310	mg/L
SAR	39.6	ratio
Total Alkalinity as CaCO3	1,900	mg/L
Total Hardness as CaCO3	87.5	mg/L

Bicarbonate as CaCO3	1,900	mg/L	31.14	meq/L
Carbonate as CaCO3	<0.1	mg/L	0.00	meq/L
Hydroxide as CaCO3	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.300	mg/L	0.00	meq/L
Nitrite Nitrogen	0.011	mg/L	0.00	meq/L
Chloride	270	mg/L	7.62	meq/L
Fluoride	<0.1	mg/L	0.00	meq/L
Phosphate	1.91	mg/L	0.06	meq/L
Sulfate	<0.1	mg/L	0.00	meq/L
Iron	0.008	mg/L	0.00	meq/L
Calcium	27.0	mg/L	1.35	meq/L
Magnesium	4.88	mg/L	0.40	meq/L
Potassium	0.950	mg/L	0.02	meq/L
Sodium	852	mg/L	37.06	meq/L
<b>Cations</b>			<b>38.84</b>	<b>meq/L</b>
<b>Anions</b>			<b>38.82</b>	<b>meq/L</b>
<b>Cation/Anion Difference</b>			<b>0.03%</b>	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

  
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Analyst

  
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Review



**APPENDIX B - R 11**



# **H<sub>2</sub>S CONTINGENCY PLAN**

**San Juan River Gas Plant  
Kirtland, New Mexico**

**WESTERN GAS RESOURCES ASSET HOLDING  
COMPANY, LLC, a wholly owned subsidiary of Anadarko  
Petroleum Corporation**

**(SEPTEMBER 2009)**

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## I. INTRODUCTION

The San Juan River Gas Plant (hereinafter the "Plant") is a natural gas processing plant which handles and/or generates hydrogen sulfide and/or sulfur dioxide; therefore this Hydrogen Sulfide Contingency Plan (the "H<sub>2</sub>S Plan" or "the Plan") has been developed: 1) to satisfy the New Mexico Oil Conservation Division Rule 11, 2) to conform with API "Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide," RP 55, and 3) to create a site-specific hydrogen sulfide contingency plan that outlines the emergency response procedures that will be implemented to ensure a coordinated, efficient and immediate action plan for alerting and protecting operating personnel and the public as well as to prevent or minimize environmental hazards and damage to property. The terms used in this Plan are to be used in the same manner as defined in Title 19 Chapter 15 Part II of the New Mexico Administrative code (19.15.11.7- Definitions) unless otherwise defined herein.

### A. PLANT DESCRIPTION & MAP (Figure 1)

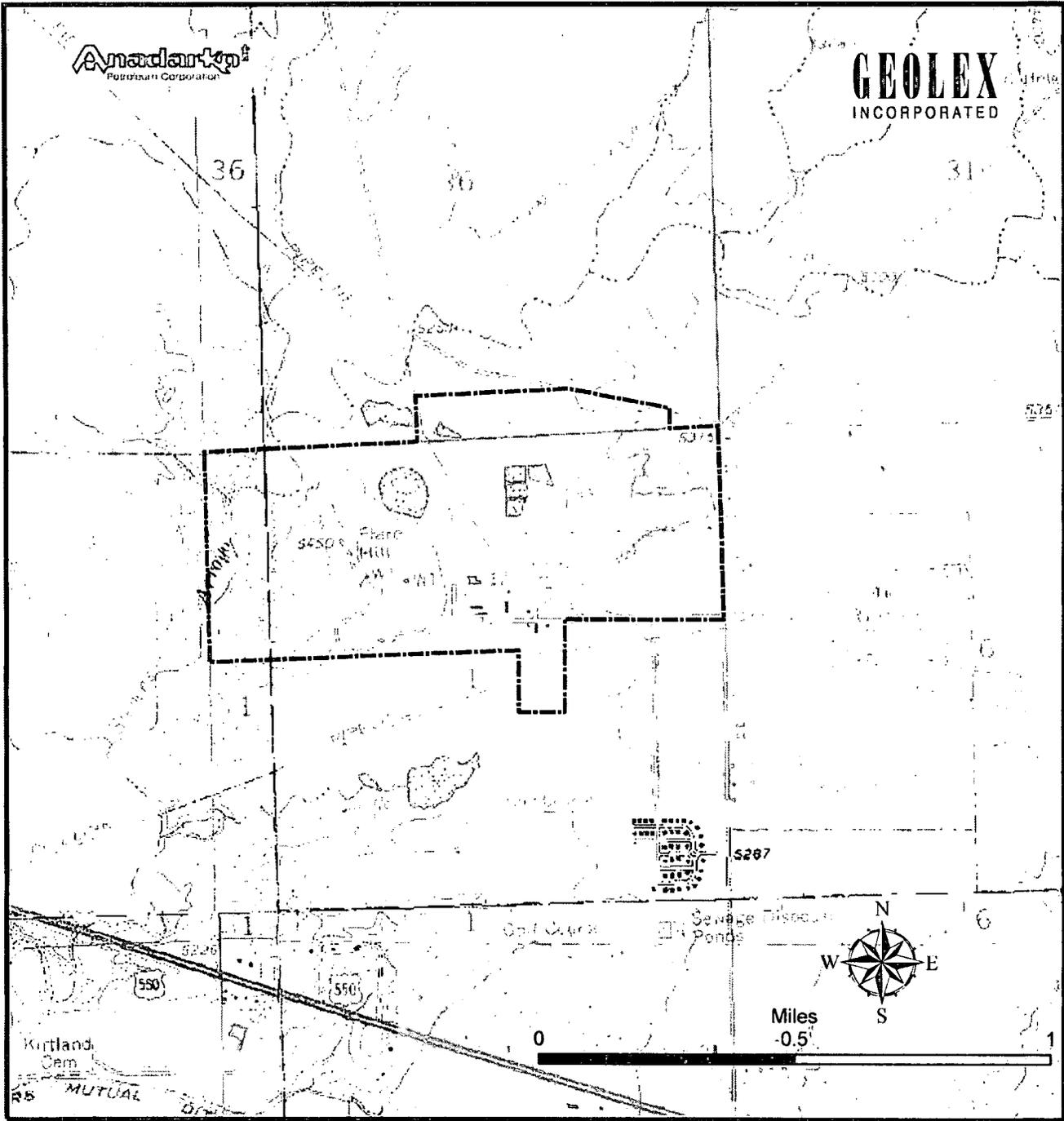
The Plant is located in Kirtland, San Juan County, New Mexico and encompasses 300+ acres. It is owned and operated by Western Gas Resources Asset Holding Company LLC, which is a wholly owned subsidiary of Anadarko Petroleum Corporation (hereinafter collectively referred to as the Company).

More specifically, the Plant is located in Section 1, Township 29N, Range 15 W in Kirtland, San Juan County, New Mexico.

1. Its coordinates are:  
**Latitude: 36.453 N                      Longitude: 108.220 W**
2. Its physical address is:  
99 County Road 6500, Kirtland, New Mexico 87417
3. Its mailing address is:  
P. O. Box 70, Kirtland, New Mexico 87417
4. Driving Directions from Farmington, New Mexico to the Plant:

From the intersection of US Highway 64 and the LaPlata Highway (New Mexico Highway 170), travel west on US Highway 64 approximately 6.2 miles to the intersection of US Hwy 64 and County Road 6500 in Kirtland, New Mexico. Turn right on County Road 6500 and travel north approximately 1.7 mile to the entrance to the San Juan River Gas Plant.

**The location of the Plant is illustrated herein on Figure 1.**



**Approximate Boundaries of Western Gas Resources Property  
Anadarko San Juan River Natural Gas Processing Plant**

## B. DESCRIPTION OF OPERATIONS

1. The Plant operations include gas processing, conditioning and compression, as well as flow lines and storage tanks. The Plant gathers produced natural gas from San Juan County, New Mexico, as well as, from Southwestern Colorado, Northeastern Arizona, and Southeastern Utah. Once gathered at the Plant, the produced natural gas is compressed; treated in an amine process for the removal of carbon dioxide and hydrogen sulfide; and dehydrated to remove the water content. The processed natural gas is then sold and shipped to various customers.
2. Because the natural gas that gathered at the Plant contains hydrogen sulfide ("sour gas"), it must be treated or processed to remove these and other impurities. The carbon dioxide and hydrogen sulfide (H<sub>2</sub>S) stream that is removed from the natural gas in the amine treating process is then sent to the Claus sulfur recovery unit whereby sulfur is removed, which results in the generation of molten elemental sulfur. Any residual H<sub>2</sub>S is routed to an incinerator where it is combusted into sulfur dioxide.

## II. THE PLAN

### A. RESPONSIBILITY FOR CONFORMANCE WITH THE H<sub>2</sub>S PLAN

It is the responsibility of all personnel on-site to follow the safety and emergency procedures outlined in the Hydrogen Sulfide Contingency Plan (the H<sub>2</sub>S Plan) as well as the following documents:

- Anadarko Petroleum Corporation Safety & Health Manual
- Anadarko Petroleum Corporation Emergency Response & Oil Spill Contingency Plan; and
- Anadarko Petroleum Corporation Environmental Policies and Programs.

### B. REVISIONS TO THE PLAN

The H<sub>2</sub>S Plan will be reviewed annually and revised at this time as necessary to address changes to the Plant facilities, operations, or training requirements, contact information and the public areas including roads, businesses, or residents potentially affected by the operations of the Plant, specifically those areas within the radii-of-exposure.

### C. AVAILABILITY OF THE H<sub>2</sub>S PLAN

The H<sub>2</sub>S Plan shall be available to all personnel responsible for implementation, regardless of their normal location assignment. A copy of the Plan will be maintained at the Plant in the Plant Superintendent's office and at the Anadarko Corporate Headquarters in The Woodlands, Texas. **See Appendix H for the H<sub>2</sub>S Distribution List**, which lists all the additional entities that have been provided a copy of the H<sub>2</sub>S Plan.

#### D. CONTENT OF THE PLAN

At a minimum, the H<sub>2</sub>S Plan will contain information regarding: 1) the emergency procedures to be followed in the event of an H<sub>2</sub>S or SO<sub>2</sub> release that may pose a threat to the Plant, public or public areas, 2) the characteristics of H<sub>2</sub>S and SO<sub>2</sub>, 3) a facility description, map and/or drawings, and 4) information regarding training and drills to be conducted related to this Plan.

### III. PLAN DESIGN CONSIDERATIONS

#### A. CHARACTERISTICS OF H<sub>2</sub>S, SO<sub>2</sub> AND CARBON DIOXIDE

##### 1. Hydrogen Sulfide (H<sub>2</sub>S)

The current inlet gas streams into the Plant contain approximately 3,500 ppm (or 0.35 mole percent) of hydrogen sulfide based on data generated from the sampling of the inlet gas at least three times daily.

Hydrogen sulfide is a colorless, toxic and flammable gas, and has the odor of rotten eggs. Hydrogen sulfide gas is heavier than air.

Hydrogen sulfide presents a significant health hazard by paralyzing the respiratory system resulting in serious injury or death.

<b>Hydrogen Sulfide Properties &amp; Characteristics</b>	
CAS No.	7783-06-4
Molecular Formula	H <sub>2</sub> S
Molecular Weight	34.082
TWA	10 ppm
STEL	15 ppm
IDLH	100 ppm
Specific Gravity (air = 1.0)	1.189
Boiling Point	-76.5°F
Freezing Point	-121.8°F
Vapor Pressure	396 psia
Autoignition Temperature	518°F
Lower Flammability Limit	4.3%
Upper Flammability Limit	46.0%
Stability	Stable
pH in water	3
Corrosivity	Reacts with metals, plastics, tissues & nerves

<b>Physical Effects of Hydrogen Sulfide</b>		
<b>Concentration</b>		<b>Physical Effect</b>
<b>ppm</b>	<b>%</b>	
1	.00010	Can be smelled (rotten egg odor)
10	0.0010	Obvious & unpleasant odor; Permissible Exposure Limit; Safe for 8-hour exposure
15	0.0015	Short Term Exposure Limit (STEL); Safe for 15 minutes of exposure without respirator
50	0.0050	Loss of sense of smell in 15 minutes
100	0.0100	Immediately Dangerous to Life & Health (IDLH); Loss of sense of smell in 3-15 minutes; Stinging in eyes & throat; Altered breathing
200	0.0200	Kills smell rapidly; Stinging in eyes & throat
500	0.0500	Dizziness; Unconscious after short exposure; Need artificial respiration
700	0.0700	Unconscious quickly; death will result if not rescued promptly
1,000	0.1000	Instant unconsciousness; followed by death within minutes

## 2. Sulfur Dioxide (SO<sub>2</sub>)

Sulfur dioxide is produced as a by-product of H<sub>2</sub>S combustion at the incinerator. The incinerator unit receives the residual hydrogen sulfide and carbon dioxide stream that is routed from the amine unit.

It is colorless, transparent, and is non-flammable, with a pungent odor associated with burning sulfur.

Sulfur dioxide is heavier than air, but will be picked up by a breeze and carried downwind at elevated temperatures. Sulfur dioxide can be extremely irritating to the eyes and mucous membranes of the upper respiratory tract.

<b>Sulfur Dioxide Properties &amp; Characteristics</b>	
CAS No.	7446-09-5
Molecular Formula	SO <sub>2</sub>
Molecular Weight	64.07
TWA	2 ppm
STEL	5 ppm
IDLH	100 ppm
Specific Gravity (air = 1.0)	2.26
Boiling Point	14°F
Freezing Point	-103.9°F
Vapor Pressure	49.1 psia
Autoignition Temperature	N/A
Lower Flammability Limit	N/A
Upper Flammability Limit	N/A
Stability	Stable
Corrosivity	Could form an acid rain in aqueous solutions

<b>Physical Effects of Sulfur Dioxide</b>	
<b>Concentration</b>	<b>Effect</b>
1 ppm	Pungent odor, may cause respiratory changes
2 ppm	Permissible exposure limit; Safe for an 8 hour exposure
3-5 ppm	Pungent odor; normally a person can detect sulfur dioxide in this range
5 ppm	Short Term Exposure Limit (STEL); Safe for 15 minutes of exposure
12 ppm	Throat irritation, coughing, chest constriction, eyes tear and burn
100 ppm	Immediately Dangerous To Life & Health (IDLH)
150 ppm	So irritating that it can only be endured for a few minutes
500 ppm	Causes a sense of suffocation, even with first breath
1,000 ppm	Death may result unless rescued promptly.

### 3. Carbon Dioxide

The current inlet gas streams to the Plant contain approximately 3% carbon dioxide based on continuous inlet gas monitoring readings.

Carbon dioxide gas is colorless, odorless, and non-flammable. Carbon dioxide is heavier than air.

<b>Carbon Dioxide Properties &amp; Characteristics</b>	
CAS No.	124-38-9
Molecular Formula	CO <sub>2</sub>
Molecular Weight	44.010
TWA	5,000 ppm
STEL	30,000 ppm
IDLH	40,000 ppm
Specific Gravity (air = 1.0)	1.5197
Boiling Point	-109.12°F
Freezing Point	-69.81°F
Vapor Pressure	830 psia
Autoignition Temperature	N/A
Lower Flammability Limit	N/A
Upper Flammability Limit	N/A
Stability	Stable
pH in saturated solution	3.7
Corrosivity	dry gas is relatively inert & not corrosive; can be corrosive to mild steels in aqueous solutions

<b>Physical Effects of Carbon Dioxide</b>	
<b>Concentration</b>	<b>Effect</b>
1.0 %	Breathing rate increases slightly
2.0 %	Breathing rate increases to 50% above normal level. Prolonged exposure can cause headache, tiredness
3.0 %	Breathing rate increases to twice normal rate and becomes labored. Weak narcotic effect. Impaired hearing, headache, increased blood pressure and pulse rate
4 – 5 %	Breathing increases to approximately four times normal rate, symptoms of intoxication become evident, and slight choking may be felt
5 – 10 %	Characteristic sharp odor noticeable. Very labored breathing, headache, visual impairment, and ringing in the ears. Judgment may be impaired, followed within minutes by loss of consciousness
10 – 100 %	Unconsciousness occurs more rapidly above 10% level. Prolonged exposure to high concentrations may eventually result in death from asphyxiation

## B. RADII OF EXPOSURE (ROE)

For the existing operations, the “Radius of Exposure” for both 500-ppm and 100-ppm of H<sub>2</sub>S gas was determined using the “escape rate”, which is calculated using the maximum daily rate of the gaseous mixture that is handled by the Plant. The rates and other variables used to calculate the ROE is discussed in greater detail in **Appendix B - ROE calculations**. Also refer to **Appendix C - map showing 500-ppm ROE and the 100-ppm ROE**.

<b>500-ppm ROE</b>	<b>933 feet</b>
<b>100-ppm ROE</b>	<b>2,042 feet</b>

## IV. EMERGENCY ACTION PROCEDURES

### A. EMERGENCY RESPONSE ORGANIZATION

The Plant uses the Incident Command System (ICS) for emergency response. The ICS structure used is based on the National Interagency Incident Management System (NIIMS), and is consistent with the National Contingency Plan (NCP).

In the event of an accidental release that results in the activation of the H<sub>2</sub>S Plan and all personnel have been evacuated out of the affected area, the Plant Superintendent, or his designee, will be the On-Scene Incident Commander (IC in this Plan). The IC will contact and coordinate with Anadarko's management in corporate office. If the severity of the response requires activation of the Emergency Response Center in The Woodlands, Texas office, the ICS structure will be staffed per the Anadarko Southern Region Emergency Response & Oil Spill Contingency Plan Manual. The staffing will not change the H<sub>2</sub>S Plan contained herein.

The Plant Superintendent or his designee shall determine:

- 1) Plant Shutdowns
- 2) Isolation of pipeline segments
- 3) Repairs, tests or restarts as required

If an emergency occurs, the Plant Superintendent, or his designee, shall be notified first. The Plant Superintendent, or his designee, shall notify Anadarko's Office in The Woodlands, Texas

### B. EMERGENCY RESPONSE

This section explains the procedures and decision to be used in the event of an H<sub>2</sub>S release; much of which has been pre-determined to ensure a coordinated, efficient and

immediate action plan for alerting and protecting operating personnel and the public as well as to prevent or minimize environmental hazards and damage to property.

## 1. OBJECTIVE

All Plant employees shall be prepared to respond to an H<sub>2</sub>S or SO<sub>2</sub> emergency at the Plant. Emergency response actions may be taken for a variety of situations that may occur in the Plant. The Plan is activated in progressive levels based on the concentration of H<sub>2</sub>S that has been released. The Plant has three (3) activation levels that are described below and in detail in the Response Flow diagram in Appendix F.

**Level 1** – Intermittent alarm sounded and/or flashing red beacons activated for H<sub>2</sub>S greater than 10 ppm

**Level 2** – Continuous alarm sounded and/or flashing red beacons activated for H<sub>2</sub>S greater than 20 ppm

**Level 3** – Catastrophic release; fire; explosion; a continuous release of maximum volume for 24 hours; or Rule 11 Mandatory Activation for 100 ppm in any defined public area; 500 ppm at any public road; or 100 ppm at a distance greater than 3000 feet from the site or the release

As soon as the Plan has been activated based on the criteria above, the Plant Superintendent, or his designee, should be notified.

## 2. PLANT EVACUATION AND EMERGENCY ASSEMBLY AREAS

- A. Plant evacuation for all visitors and Plant personnel that are not operators begins at the 10 ppm H<sub>2</sub>S intermittent alarm and/or flashing red beacon. The Plant operators are to put on the 30-min SCBA and first determine if any personnel are in distress and assist any distressed personnel evacuate to Emergency Assembly Area 1. Emergency services (911) will be contacted if there are injuries or as otherwise deemed necessary. BHP Mines and Praxair are also to be notified. The operators will then, wearing the SCBA, investigate the cause of the release. At the sound of the alarm and/or flashing red beacons, all other personnel in the Plant are to stop work, check the prevailing wind direction and immediately proceed along designated evacuation routes and/or upwind to the pre-designated Emergency Assembly Area(s) that are described in **Appendix F**.

Prevailing winds for the area are from the east and evacuation along the designated routes should be upwind. If the designated evacuation route is downwind of the release (based on the windsock), then all evacuees should proceed upwind to the Emergency Assembly Areas

The Plant evacuation diagram showing evacuation routes and Emergency Assembly Areas is attached in **Appendix D**.

**The Emergency Assembly Area 1 is:**

**Parking Area on the eastside of the Plant Superintendent Office Building (see Appendix C & D)**

**The Emergency Assembly Area 2 is:**

**Area at Plant Rd and Hwy 6500  
(see Appendix C)**

**The Emergency Assembly Area 3 is:**

**Kirtland Elementary School Parking Lot , 30 Road 6446  
(see Appendix C)**

- B. Roll call shall be conducted at the Emergency Assembly Area to assure all personnel have evacuated safely. This facility is a PSM facility and requires all visitors check in before entering the Plant, thus the check-in sheet will be used at the Emergency Assembly Areas to make a full accounting of all personnel and visitors.

### **3. IMMEDIATE ACTION PLAN/ INITIAL RESPONSE**

The following outlines the immediate action plan that is illustrated by flow diagram in **Appendix F**. This is to be used when responding to an H<sub>2</sub>S release. Additional or long term response actions will be determined on a case-by-case basis, if needed, once the Incident Command Center and System is established following the immediate response.

#### **LEVEL 1 RESPONSE**

1. The audible signal for a Plant emergency and evacuation is an intermittent horn (repeating off/on) activated when levels of H<sub>2</sub>S of 10 ppm are detected. The frequency of this intermittent alarm will increase as the concentration of the H<sub>2</sub>S increases. In addition, a flashing red light or beacon will be activated at 10 ppm H<sub>2</sub>S. At the initial sound of the intermittent alarm or the flashing red beacon, each operator (2 per shift) will put on a 30 minute SCBA and all other personnel in the Plant complex shall immediately evacuate the Plant using the evacuation routes to the Emergency Assembly Area 1 (see **Appendix D**). The operators, upon suit up with the SCBA, will first help any persons in distress evacuate to the

Emergency Assembly Area. If deemed necessary by the Senior Operator, local emergency response service providers will be contacted by Plant personnel designated by the Senior Operator.

2. BHP Mines and Praxair will be notified of a release by personnel designated by the Plant Superintendent or his designee. The nature of the release and status of containment will be conveyed. Both will be advised to report the incident to employees working near the Plant and to alert any third party contractors or service companies working in the Plant vicinity or imminently scheduled to work in the Plant vicinity, of the release. All should be instructed to leave the area and not to enter/re-enter area until further notice.
3. Wearing the SCBA, the operator(s) will attempt to fix the cause of the release. OSHA guidelines allow operators to work in areas with 10ppm for up to 8 hours. The H<sub>2</sub>S levels at the Emergency Assembly Area 1 will be monitored with a hand held or personal monitor.
4. The Senior Operator will set up secondary re-entry team(s) with 30 min. SCBA to re-enter and resolve the situation. Re-entry will occur in 15 minute shifts at the direction of the IC until the problem is resolved or the ESD activated. If H<sub>2</sub>S levels in Emergency Assembly Area 1 exceed 10 ppm, evacuate to Emergency Assembly Area 2 and continue to monitor Assembly Area H<sub>2</sub>S level. If release is resolved and monitored levels in the Plant are less than 10 ppm, personnel may re-enter to Plant. BHP and Praxair will be notified once release is contained and monitored H<sub>2</sub>S levels are less than 10 ppm. The OCD shall be notified within one hour of any release that activates the Plan. If the release is not resolved and H<sub>2</sub>S levels continue to increase, Level 2 Response is indicated.

## **LEVEL 2 RESPONSE**

1. The continuous alarm and indicates the detection of H<sub>2</sub>S greater than 20 PPM. Flashing red beacons indicate a H<sub>2</sub>S release of 10 ppm or greater and they will continue for a release of 20 ppm or greater. At the initial sound of the continuous alarm or observance of the flashing red beacons, the operators will immediately put on a 30 minute SCBA and all other personnel in the Plant complex will put on emergency escape packs if they are wearing them and evacuate along with all other personnel using the evacuation routes to the Emergency Assembly Area 2 (see **Appendix D**). The operators, upon suit up with the SCBA, will first help any persons in distress evacuate to the Emergency Assembly Area. If deemed necessary by the Senior Operator, local emergency response service providers will be contacted by Plant personnel as designated by the Senior Operator.
2. Praxair is trained to evacuate at continuous alarm sounds. Praxair, BHP Mines and other non-manned businesses will be contacted by phone and notified of release and asked to evacuate, if they have not already. All entities within the 100 ppm ROE will be contacted by phone and notified of release. The nature of the

release and status of containment will be conveyed. Notifications will include but are not limited to the following:

- Praxair, BHP and all unmanned businesses will be instructed to alert all company personnel, third party contractors and/or services companies working in the area and those imminently scheduled to work in the area, of the release and evacuation status of the Plant. They should be instructed to immediately leave and/or not enter/re-enter the Plant vicinity until further instruction.
- BHP will be advised to check ventilation shaft status within the Plant vicinity and take internal company pre-emptive safety action(s) as deemed appropriate.
- Riverview Golf Course will be instructed to clear the course of both employees and golfers until further notice.
- San Juan College will be notified of the release though not within the 100 ppm ROE.

The LEPC and law enforcement will be contacted by phone and notified of the release. The Plant Superintendent or his designee will assign personnel notification responsibility.

3. Operator(s) with 30 minute SCBA to assess and attempt to resolve. After 15 minutes and no resolution, the operator(s) will activate the ESD and will evacuate to Emergency Assembly Area 2.
4. If monitored H<sub>2</sub>S levels at Emergency Assembly Area 2 exceed 10 ppm, evacuate to Emergency Assembly Area 3, Kirtland Elementary School parking lot. If deemed necessary, local emergency response service providers will be contacted by the operator.
  - a) Re-entry will occur in full SCBA and in 15 minute shifts at the direction of the IC until IC determines problem has been resolved or additional ESD (pipeline) activated.
  - b) If release is resolved and monitored levels of H<sub>2</sub>S in the Plant are less than 10 ppm, personnel may return to Plant. The OCD shall be notified within one hour of any release that activates the Plan. All businesses previously notified will be informed that the release has been resolved and advised of the current monitored H<sub>2</sub>S levels at the Plant.
  - c) No resolution requires activation of full H<sub>2</sub>S Plan with notifications and reporting as per Plan. If the release is not resolved and/or H<sub>2</sub>S levels continue to increase, Level 3 Response is indicated.

### LEVEL 3 RESPONSE

1. For H<sub>2</sub>S at 20 ppm or greater at Assembly Area 2, repair efforts at Level 2 unsuccessful, worst case scenario, and/or catastrophic release have occurred then implement a Level 3 response.
2. All personnel shall have evacuated to Emergency Assembly Area 3, Kirtland Elementary School. Evacuation of Praxair has been confirmed. Implement full H<sub>2</sub>S plan with all notifications and public agency involvement. Notifications to area businesses, both manned and unmanned will include the nature of the release and status of containment. Notifications will include but are not limited to the following:
  - Praxair, BHP and all unmanned businesses will be instructed to immediately alert all company personnel, third party contractors and/or services companies working in the area and those imminently scheduled to work in the area, of the release and evacuation status of the Plant. They should be instructed to immediately leave and/or not enter/reenter the Plant vicinity until further instruction. All shall be informed of the road block on County Road 6500.
  - BHP will be advised to check ventilation shaft status within the Plant vicinity and take internal company pre-emptive safety action(s) as deemed appropriate.
  - Riverview Golf Course will be instructed to immediately clear the course of both employees and golfers and shelter in-place at the club house until otherwise advised.
  - San Juan College will be notified of the release and advised to shelter in place until otherwise advised.
3. If escaping vapors have been ignited, the vapors should be allowed to continue to burn unless the fire endangers personnel, other property, or other equipment.
4. When applicable: Maintain communication with the Plant Superintendent, or his designee, to keep him up-to-date of the situation and the action taken prior to his arrival at the location.
5. Initiate and maintain a Chronological Record of Events log.
6. Within one hour after the activation of the H<sub>2</sub>S Plan, begin agency notifications by calling OCD and NRC.
7. Establish media staging area adjacent to Assembly Area 3 and direct all media to it.

8. Once resolved and monitored levels in the Plant are less than 10 ppm, return to Plant. All businesses previously notified will be informed that the release had been resolved and advised of the current monitored H<sub>2</sub>S levels at the Plant.
9. Agency reports to be submitted as required.

#### **4. EMERGENCY SHUTDOWN SYSTEM**

The Plant has an extensive Emergency Shut Down (ESD) system that is located within the Plant and in various locations along the pipelines that feed the Plant. The ESD is designed to prevent a Level 3 response. See **Appendix E** for a more detailed description of the ESD.

#### **5. NOTIFICATIONS AND REPORTS**

The Plant has various notification and reporting obligations. Some are related to its state air quality permit that is overseen by NMED as well as state and federal spill reporting obligations. In addition to the regulatory obligations noted above, Plant personnel also have internal and external notification and reporting obligations associated with the activation of this Plan.

##### **A. DISCOVERY AND INTERNAL REPORTING**

1. All Plant personnel who perform maintenance and/or repair work within the Plant wear H<sub>2</sub>S monitoring devices to assist them in detecting the presence of unsafe levels of H<sub>2</sub>S. When any Plant personnel while performing such work discovers a leak or emission release they are to attempt to resolve the issue as long as H<sub>2</sub>S levels remain below 10 ppm. The personal monitoring devices they wear will give off an audible alarm at 10 ppm. These devices are to be worn as low on the body as possible since H<sub>2</sub>S is heavier than air and will tend to stand or accumulate in low lying areas. If the response action needed to resolve the issue is more than simply closing a valve or stopping a small leak, the Plant personnel shall notify the Plant Superintendent, or his designee and convey, at a minimum, the following information:
  - Name, telephone number, and location of person reporting the situation; and
  - Type and severity of the emergency; and
  - Location of the emergency (area/block, mile markers, latitude & longitude, or building), and the distance to surrounding equipment and/or structures; and

- The cause of the spill or leak, name and quantity of material released, and extent of the affected area including the degree of environmental hazard; and
  - Description of injuries and report of damage to property and structures; and
  - Initiate and maintain a Chronological Record of Events log. This record should record the time, date, and a summary of the event.
2. If the Plant personnel detects H<sub>2</sub>S levels greater than 10 ppm either as a result of his/her personal monitoring device or the Plant intermittent alarm and/or red flashing beacon, Plant operators are to contact their immediate supervisor for assistance and put on the 30-min SCBA so they can attempt to resolve the issue. All non essential persons shall be notified of the release and evacuated from the area. Operators wearing the SCBAs are to first assist any persons requiring assistance during the evacuation, then attempt to resolve the issue. The immediate supervisor is then responsible for notifying the Plant Superintendent or his designee so that the IC system can be implemented and H<sub>2</sub>S Plan activated if necessary.
  3. Once the Plant Superintendent is contacted, he or his designee is to notify the appropriate Corporate management, EHS personnel, Plant emergency response personnel, and advise them of the existing emergency situation. Corporate management will then conduct the reporting up that is necessary based on the situation.
  4. Plant personnel are to advise any contractor, service company, and all others on-site or attempting to enter the Plant that the H<sub>2</sub>S Plan has been activated.

## **B. PUBLIC AWARENESS AND COMMUNICATION**

Public awareness and communication is a primary function of the H<sub>2</sub>S Plan. Company has compiled a list of various public, private, state, local contacts that are to be notified at various phases during the activation of the Plan. Refer to the Response Flow diagram in **Appendix F** that indicates when certain entities are to be contacted in event of activation of this Plan. **Appendix G** is a listing of the entities to be contacted and **Appendix H** is a list of community organizations that have received a copy of the Plan. Company will inform all state and local response organizations on its Plan as well as those businesses that fall within its 500-ppm and 100-ppm ROE as illustrated in **Appendix C**.

## **C. PUBLIC AREAS, NEARBY BUSINESSES AND RESIDENTS**

The contact information for all residents, businesses and public areas is contained in **Appendix G**. All businesses and public places within the 500 ppm and 100 ppm radius of exposure will be contacted by Plant personnel as designated by Plant

Superintendent if the Plan is activated and based on response level as described in the Immediate Action Plan and advised of the following:

- The nature and extent of the release/emergency at the Plant and recommendations for protective actions, such as evacuation or shelter-in-place
- Any other event specific information that is necessary to protect the public
- Updates as to the status of the release and continued safety measures to be taken, including but not limited to when to evacuate and/or when it is safe to return to the area.

1. Residences or Public roads:

There are no residences or public roads located within 500 ppm or the 100 ppm radius of exposures.

2. Businesses or Other Public Areas:

All businesses on this list will be provided with a copy of the H<sub>2</sub>S Plan and will be contacted about participation when local emergency response training events or drills occur.

**Within the 100 ppm ROE:**

There is **one** public area (a portion of the Riverview Golf Course) that is located within the 100 ppm radius of exposure.

BHP will be contacted when the Plan is activated to ensure that the out of service vent pipes have not been activated. Currently, no operating BHP Mining ventilation pipe ducts are within the 100 ppm ROE; however, out of service ventilation pipe ducts do exist and have been closed by manual valve.

Three unmanned businesses are located within the 100 ppm ROE (XTO, El Paso Natural Gas and Mapco Enterprises). Their corporate offices will be notified if the Plan is activated as per the immediate action plan.

**Within the 500 ppm ROE:**

There is one additional manned business (Praxair) within the 500-ppm ROE. Praxair is to be notified if the Plan is activated.

## 6. SITE SECURITY

- A. In order to have an accurate listing of all personnel on-site in the event of an emergency, a daily sign-in log sheet shall be utilized. The sign-in log sheet shall include at a minimum the person's name, the company name, the time of arrival, and the time of departure.

- B. The Incident Commander shall be responsible to assure that all personnel sign-in upon arrival and sign-out upon departure from the job site.
- C. The Incident Commander may at his discretion assign the responsibilities for the daily sign-in log sheet to the individual designated as the Record Keeper or another designee.
- D. At the discretion of the Incident Commander, a security coordinator and/or a security team may be established, and the access to the job site restricted.
- E. For a Level 3 release a road block would be set up at the entrance to the Plant at County Road 6500.

## 7. SIGNS & MARKERS

The Plant has warning signs indicating the presence of H<sub>2</sub>S/Poisonous Gas and high pressure gas at the entrance to the Plant. Emergency response phone numbers are posted at the entrance to the Plant. Signs are located at the Plant gate entrance indicating that all visitors are to sign in.

## 8. FIRST-AID STATION

The first aid station will be located at the Emergency Assembly Area.

### **FIRST AID KITS are located:**

- |  |
|--|
| <ul style="list-style-type: none"><li>• Plant Superintendent Office Building,</li><li>• Maintenance/Safety Office Building, and</li><li>• Each company vehicle</li></ul> |
|--|

## 9. MEDIA SITE

- A. If a Level 2 or 3 Response occurs, the Media Site will be located adjacent to Emergency Assembly Area 2, except for Level 3 response in which case it will be located adjacent to Emergency Assembly Area 3.
- B. At no time shall any unescorted representative from the media be allowed any closer to the Plant than the Media Site location, unless approved by the Incident Commander, the Safety Officer, and the Media Relations Officer.

## 10. EMERGENCY AND SAFETY EQUIPMENT

Refer to **Appendix E** for information pertaining to the Plant's emergency and Safety equipment.

## IV. TRAINING AND DRILLS

### A. TRAINING

1. Training on the H<sub>2</sub>S Plan
  - Inclusion of local officials and LEPC
  - Public areas and businesses (within the ROE)
  - Those on the Plan distribution list
  
2. Other Emergency Response Related Training

Anadarko/Western has an extensive safety training program and addresses various aspects of job related hazards. All training records for the Plant are maintained at the Plant. The following is a limited list and summary of the training programs that relate to the H<sub>2</sub>S Plan and Emergency Response:

- Plant Orientation Training - All Plant personnel, visitors, and contractors must attend a Plant overview orientation prior to obtaining permission to enter the Plant. A refresher course on this training is required annually for all persons. This training also complies with the requirements of the Anadarko and Plant's Process Safety Management Program and Procedures Manuals.
  
- Hydrogen Sulfide and Sulfur Dioxide Training – All Plant personnel receive annual refresher training on hydrogen sulfide and sulfur dioxide, which is conducted by Anadarko personnel. If an individual is unable to attend, they may be required to attend a third party training session. Hydrogen sulfide training cards are issued as documentation of this training. All contract employees and visitors are required to have had hydrogen sulfide training and to provide the Plant a copy of their certification card prior to obtaining permission to enter the Plant.
  
- Respirators - All Plant personnel, with the exception of the Plant Operations Specialist, are trained annually on the proper use of respirators. In addition to the annual training, all Plant personnel with the exception noted above are fit tested annually on the respirators. Except for the Plant Operations Specialist, all Plant personnel must have medical clearance to work in the Plant. Medical clearance is mandatory for H<sub>2</sub>S certification. Medical clearance review for work in a H<sub>2</sub>S environment is conducted on a bi-annual basis unless the individual has experienced medical problems within that two year interval that requires updating the medical clearance.

- Hazard Communication - All Plant personnel are trained annually on Hazard Communication and SARA Title III Right-to-Know information. The annual training includes, at a minimum, a review of material safety data sheets (MSDS) for those materials that are present at the Plant and labeling.
- Personal Protective Equipment (PPE) - All Plant personnel are trained annually on the Anadarko requirements for personal protective equipment (PPE). The training includes, at a minimum, a review of all the types and levels of personal protective equipment and how to select the correct equipment for the job.

## **B. EMERGENCY RESPONSE DRILLS**

1. The Plant will conduct, at least, a tabletop drill annually. Multiple drills during the year may be scheduled at the discretion of the Plant Superintendent or as part of the Emergency Response Center in The Woodlands.
2. The annual drill will exercise this Plan and include, at a minimum, contacting the entities that are identified as being within the 500-ppm ROE and the Local Emergency Response contacts identified on **Appendix G**. The drills will also include briefing of public officials on issues such as evacuation or shelter-in-place plans even though the current ROE will not require evacuations or shelter in place.
3. Drill training will be documented and those records will be maintained at the Plant. The documentation shall include at a minimum the following:
  - a. Description or scope of the drill, including date and time
  - b. Attendees and Participant to the drill
  - c. Summary of activities and responses
  - d. Post drill de-brief and reviews

# APPENDIX A

## WORST CASE SCENARIO

The basis for worst case calculations is 3500 parts per million (ppm) or 0.35 mole percent of hydrogen sulfide in the inlet gas to the San Juan River Gas Plant and a maximum daily (24 hour) processing volume of 35,000 Mscf. The ROE assumes an uncontrolled instantaneous release from the area around the amine contact towers of the referenced volume and concentration. Calculations using the ROE formula pursuant to NMAC 19.15.11 are provided in **Appendix B**.

It should be noted that this rate, though used as worst case, would unlikely be released due to the Plant emergency shut down (ESD) systems that when activated shuts down the Plant. ESD valves on the inlet receivers to the Plant act as secondary control to prevent gas from entering the Plant. In addition, each inlet pipeline (Aneth and Barker) have ESD valves 2 miles from the Plant as well as ESD valves another 6 and 8 miles down respectively.

# APPENDIX B

## RADIUS OF EXPOSURE CALCULATIONS

The formulas for calculating the two ROEs (as specified by the regulations) are as follows:

### 500-ppm RADIUS OF EXPOSURE CALCULATION

$$X = [(0.4546)(\text{hydrogen sulfide conc.})(Q)]^{0.6258}$$

Where:

X = Radius of exposure in feet

Hydrogen Sulfide Conc = Decimal equivalent of mole or volume fraction of hydrogen sulfide in the gaseous mixture

Q = Escape rate expressed in cubic feet per day (corrected for standard conditions of 14.73 psi absolute and 60 degrees Fahrenheit)

- a) For existing facilities or operations, the escape rate (Q) is the maximum daily rate of the gaseous mixture produced or handled or the best estimate thereof. For the San Juan River Gas Plant the Company is using for contingency planning purposes an "escape rate" equal to the inlet gas volume of 35,000 MCFD. The inlet gas volume at the Plant is somewhat variable and is continuously metered. The Plant records daily inlet gas volumes and prepares a daily volume report. 35,000 MCFD has been selected as the escape rate since it is the highest volume that the Plant would handle under its current operations and is considered worst case interpretation of the volume of gas.

As to hydrogen sulfide concentration of the inlet gas, daily monitoring data indicates variable concentrations, however 3500 ppm (0.35 mole percent) is a worst case scenario. Thus, the Plant has used a hydrogen sulfide concentration of 3500 ppm for its contingency planning purposes.

Using:

$$Q = 35,000,000$$

$$\text{H}_2\text{S conc} = 3500 \text{ ppm or } 0.35 \text{ mole\%}$$

$$\frac{[(0.4546) * (\text{H}_2\text{S concentration}) * (\text{gas volume } (Q))]^{0.6258}}{[(0.4546) * (3500 * .000001) * (35,000,000)]^{0.6258}}$$

**500-ppm ROE = 933 feet**

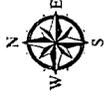
**100-ppm RADIUS OF EXPOSURE CALCULATION**

$$\frac{[(1.589) * (\text{H}_2\text{S concentration}) * (\text{gas volume})]^{0.6258}}{[(1.589) * (3500 * .000001) * (35,000,000)]^{0.6258}}$$

**100-ppm ROE = 2,042 feet**

# APPENDIX C

## 100-PPM AND 500-PPM RADIUS OF EXPOSURE MAP

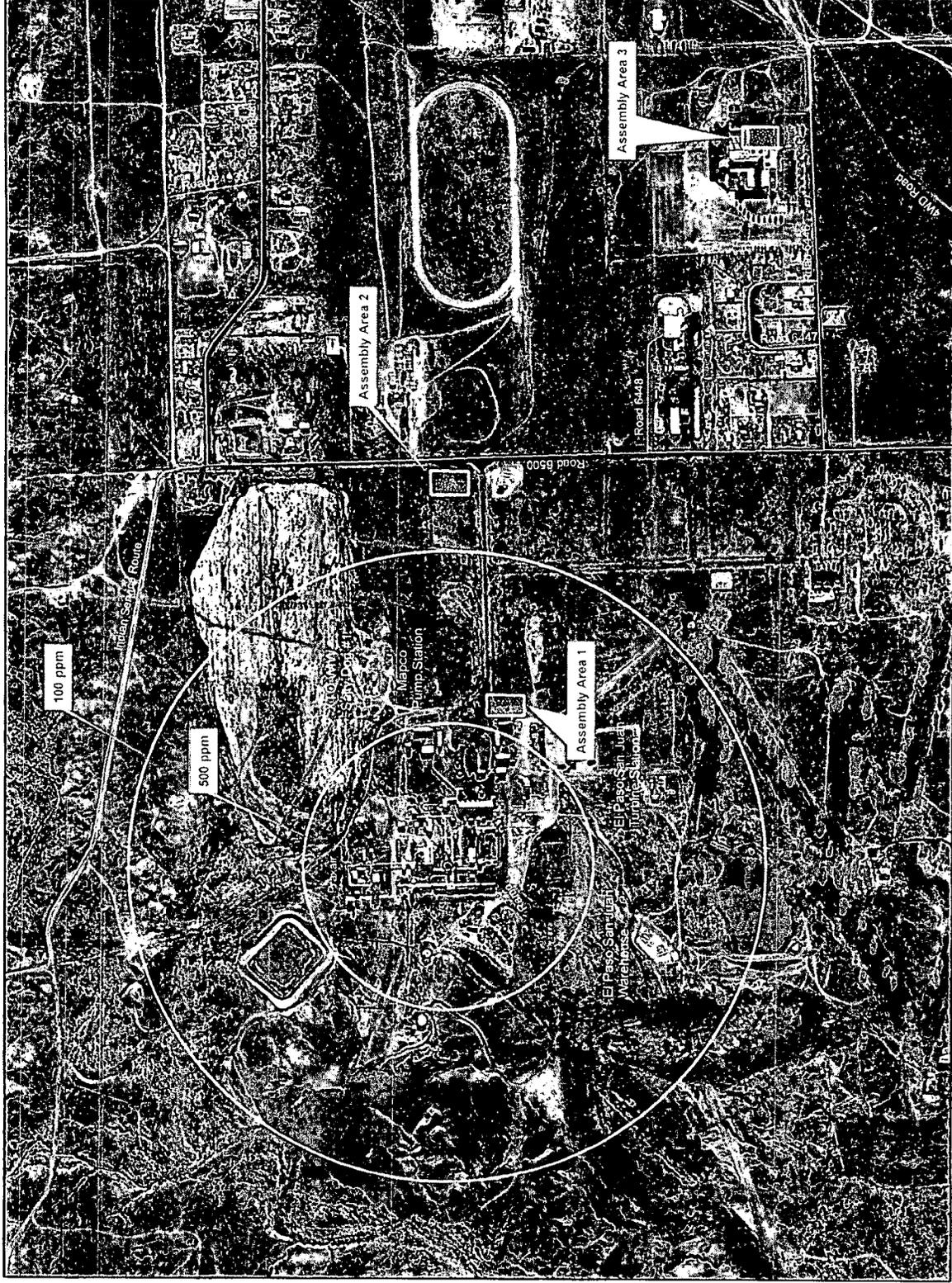


San Juan River Gas Plant  
Hydrogen Sulfide Contingency Plan  
Radius of Exposure

CURRENT OPERATIONS

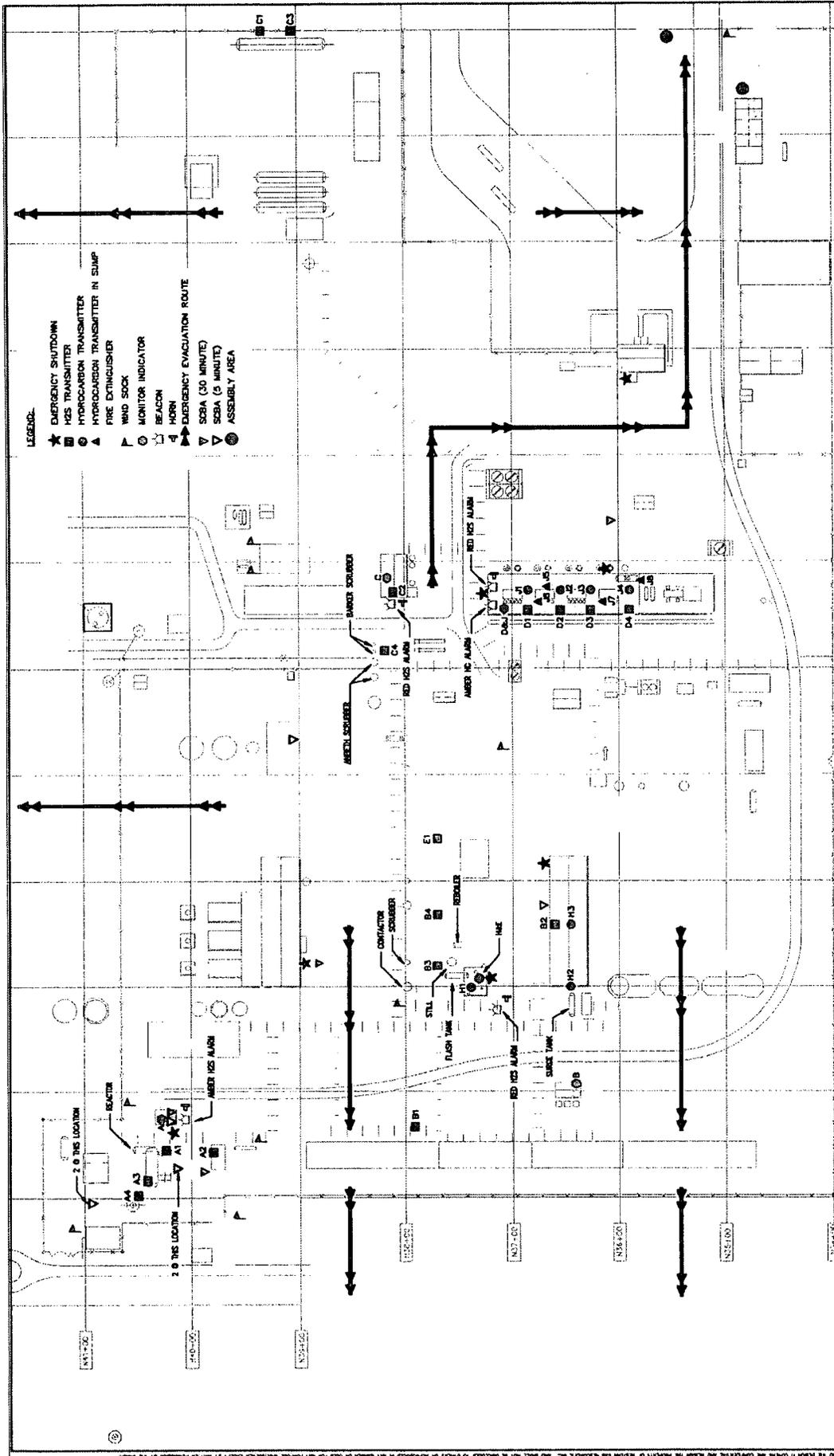
- Amine Tower \*
- Radius of Exposure
  - 933 ft (500 ppm)
  - 2042 ft (100 ppm)
- Assembly Area
- Business

\*Based on 35 MMsctd @ 3500 ppm H<sub>2</sub>S



# APPENDIX D

PLANT DIAGRAM WITH  
EVACUATION ROUTES & EMERGENCY  
EQUIPMENT LOCATIONS



Western Gas Resources, Inc.  
 2000 W. 7th Ave. - Denver, CO 80202-1000  
 SAN JUAN RIVER PLANT  
 EMERGENCY ITEMS AND PLACEMENT  
 SAN JUAN RIVER PLANT  
 P.O. BOX 70 - DENVER, CO 80202-0070  
 DRAWING NUMBER: 8199-120000

NO.	DESCRIPTION	DATE	BY	CHKD.
1	ISSUED FOR INFORMATION			
2	REVISION			
3	REVISION			
4	REVISION			
5	REVISION			
6	REVISION			
7	REVISION			
8	REVISION			
9	REVISION			
10	REVISION			
11	REVISION			
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24	REVISION			
25	REVISION			
26	REVISION			
27	REVISION			
28	REVISION			
29	REVISION			
30	REVISION			

DATE: 12/15/00  
 DRAWN: [Name]  
 CHECKED: [Name]

NO. 14 REVISION OF DRAWING AND CHECKING AND REVISIONS ARE KEPT IN THE OFFICE OF THE PROJECT ENGINEER. THE PROJECT ENGINEER IS RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. THE PROJECT ENGINEER'S SIGNATURE AND DATE SHALL BE REQUIRED TO VERIFY THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. THE PROJECT ENGINEER'S SIGNATURE AND DATE SHALL BE REQUIRED TO VERIFY THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.

# APPENDIX E

## DESCRIPTION OF H<sub>2</sub>S MONITORING & ALARM SYSTEMS

### A. EMERGENCY SHUTDOWN SYSTEM

There are (8) ESD manual stations located at various points in the facility (Appendix D). **The Plant ESD can be activated at any time at the direction of the Plant Superintendent or Incident Commander and is to be activated based on this Plan after 20 ppm H<sub>2</sub>S has been detected in the Plant and efforts to resolve the issue for 15 minutes have failed.**

When anyone of the eight (8) manual stations are activated, the system will be shutdown and the natural gas inlets and outlets will be blocked. The operators are also able to auto close the two (2) main blocks on the incoming gas lines to the Plant. Activating these should allow the Plant to avoid a Level 3 response. Two miles north of the Plant on the Barker Dome line and the Aneth line, there are isolating block valves (manual) that can prevent further gas flow into the Plant pipeline system. Also, further upstream on the Barker and Aneth lines there are additional isolating block valves at 6 miles and 8 miles upstream on their respective lines. These block valves furthest upstream, isolate the entire system from the field gathering lines coming into the Plant.

### B. PLANT ALARMS, VISIBLE BEACONS & WIND INDICATORS

1. Colored beacons, horns, and wind directions indicators are located in various locations throughout the Plant and are indicated on **Appendix D**.
2. The audible signal for an emergency response and Plant evacuation is a repeating intermittent alarm that sounds at 10 ppm H<sub>2</sub>S. The frequency of this intermittent alarm will increase as the concentration of the H<sub>2</sub>S release increases. The alarm will become continuous when the concentration of the H<sub>2</sub>S release is 20 ppm or higher. At the initial sound of this intermittent alarm, the Plant operator will put on a SCBA and all personnel in the Plant complex shall immediately proceed in a safe manner to the Emergency Assembly Areas as prescribed by the Emergency Action Plan on page 19 of this Plan.
3. A flashing red beacon signifies an H<sub>2</sub>S release of 10 ppm and all personnel in the Plant complex shall immediately proceed in a safe manner to the Emergency Assembly Area 1 located east of the main office. If this area is not determined to be safe all will move to Assembly Area 2 which is on road 6500 at the main gate on the east side of the facility. Evacuation routes and Assembly Area 1 are indicated on **Appendix D**.

4. A routine process alarm will cause a horn to sound. This horn is a wavering siren sound that is used to alert the Plant Operator to return to the Control Room. No emergency response or evacuation is required when this siren sounds. Flashing beacons are located throughout the Plant and are utilized to assist the Plant Operator in identifying the location of the Plant alarm or Plant upset. Any beacon colors other than red do not identify an emergency response or evacuation.
5. Wind direction indicators are installed throughout the Plant and at the Plant Superintendent Office Building. At least one wind direction indicator can be seen at any location within the Plant complex, as well as, from any point on the perimeter of the Plant. There are 10 windsocks located in the Plant.

### C. GAS DETECTION EQUIPMENT

1. The Plant uses the Industrial Scientific Corporation 4200 Series Remote H<sub>2</sub>S Sensors. These sensors are a fixed point monitor to detect the presence of hydrogen sulfide in ambient air. The sensors are connected to Allan Bradley/SLC-500 Rockwell Logic Controllers with an output to Moore Micro-Advantage controllers and from here to the operators PLC. The red flashing beacon is activated at 10 ppm. The horn is activated with an intermittent alarm at 10 ppm and changes to a steady alarm at 20 ppm.
2. The fixed hydrogen sulfide monitors are strategically located throughout the Plant to detect an uncontrolled released of hydrogen sulfide. The SRU has 4 sensors labeled A-1 through A-4. The treating plant area has 4 sensors labeled B-1 through B-4. There are two sensors at the east side of the Plant labeled C-1 and C-3. There is one sensors located at the liquid stabilizer skid labeled E-1. This is the center of the process area. The compressor building has eight methane sensors, these shut the compressors down at 50% LEL. The compressor building also is equipped with fire eyes that will also shut the units down. The Plant operators are able to monitor the ppm level of H<sub>2</sub>S of all the Plant sensors on their control/monitor PLC located in the operators building. These sensors are all located on the plot plan on **Appendix D**. These sensors all have to be acknowledged and will not clear themselves. This requires immediate action for any occurrence or malfunction. The Plant sensors are calibrated quarterly.
3. Hand held gas detection monitors are available to plant personnel to check specific areas and equipment prior to initiating maintenance or work on the process or equipment. There are 2 handheld and 9 personal monitors that are used by individuals for special projects and field work. The hand held gas detection devices are BW Technologies 4-gas detectors. The detectors have sensors for oxygen, LEL (explosive hydrocarbon atmospheres), hydrogen sulfide, and carbon dioxide. They indicate the presence H<sub>2</sub>S with a beeping sound at 10 ppm. The beeps change in tone as H<sub>2</sub>S increases to 20 ppm. The personal monitors are set to alarm (beep) at 10 ppm

with the beeps becoming closer together as the H<sub>2</sub>S concentration increases to 20 ppm. Both the hand held and personal monitors have digital read outs of H<sub>2</sub>S ppm concentration.

#### **D. RESPIRATORS**

1. The Plant has 30 minute Self-Contained Breathing Apparatus (SCBA) respirators and 5 minute escape packs strategically located throughout the Plant.
2. The respirator containers are identified in the process area and the locations are identified on **Appendix D**.
3. All Plant personnel with the exception of the Plant Operations Specialist are certified to use the SCBA respirators.

#### **E. FIRE FIGHTING EQUIPMENT**

1. The Plant personnel are trained only for insipient stage fire fighting.
2. The fire extinguishers located in the Plant process areas, compressor buildings, process buildings, and company vehicles are typically a 20# Ansul dry chemical fire extinguisher. **See Appendix D**.
3. The Plant does not have a fire water system, but only a utility water system that is not designed for fire fighting.

# APPENDIX F

## H<sub>2</sub>S CONTINGENCY PLAN FLOW DIAGRAM

### LEVEL 1 RESPONSE

**H<sub>2</sub>S DETECTED GREATER THAN 10 PPM  
&/OR INTERMITTENT ALARM SOUNDS/FLASHING RED BEACONS  
ACTIVATED**

- OPERATORS PUT ON RESPIRATORS (30 minute SCBA) TO ASSESS & RESOLVE PROBLEM  
(Operators are allowed under OSHA to work for up to 8 hours in 10ppm H<sub>2</sub>S environment)
- ALL OTHERS EVACUATE TO ASSEMBLY AREA 1
- NOTIFY PRAXAIR & BHP MINES

**AT ASSEMBLY AREA 1**

- MONITOR H<sub>2</sub>S LEVELS AT ASSEMBLY AREA
- OPERATORS WILL SET UP SECONDARY ENTRY TEAMS W/ 30-MIN SCBA TO TRY TO RE-ENTER AND RESOLVE
- RE-ENTRY WITH SCBA WILL OCCUR IN 15 MINUTE SHIFTS AT THE DIRECTION OF THE IC UNTIL IC DETERMINES PROBLEM HAS BEEN RESOLVED OR ESD IS ACTIVATED)

**CALL 911  
IF INJURY OR  
DEATH  
FOR EMERGENCY  
ASSISTANCE**

**ONCE RESOLVED & MONITORED  
LEVELS IN PLANT ARE LESS THAN 10  
PPM RETURN TO PLANT**

**IF H<sub>2</sub>S LEVELS AT ASSEMBLY AREA 1  
EXCEED 10PPM  
EVACUATE TO ASSEMBLY AREA 2**

**NOTIFY NMOCD WITHIN ONE HOUR  
MAKE AGENCY REPORTS AS  
NECESSARY**

**AT ASSEMBLY AREA 2**

- MONITOR H<sub>2</sub>S LEVELS AT ASSEMBLY AREA
- FOLLOW LEVEL 2 RESPONSE ACTIONS

**NOTIFY LEPC AND OTHER  
PUBLIC OFFICIALS AND  
EMERGENCY SUPPORT SERVICES**

## LEVEL 2 RESPONSE

**H<sub>2</sub>S LEAK DETECTED GREATER THAN 20 PPM &/ CONTINUOUS ALARM SOUNDS/FLASHING RED BEACONS ACTIVATED**

- **OPERATORS PUT ON RESPIRATORS (30-MIN SCBA) TO ASSESS & RESOLVE PROBLEM**

**(Operators have 15 minutes to resolve after which they must evacuate to Assembly Area #2 and begin rotational entry to Plant)**

- **ALL OTHERS EVACUATE TO ASSEMBLY AREA 2**
- **EVACUATE PRAXAIRE**
- **NOTIFY BHP MINES, ALL OTHER BUSINESSES IN THE 100 & 500 PPM ROE.**

### AT ASSEMBLY AREA #2

- **MONITOR H<sub>2</sub>S LEVELS AT ASSEMBLY AREA**
- **IF MONITORED LEVELS EXCEED 10 PPM EVACUATE TO ASSEMBLY AREA 3 (KIRTLAND ELEMENTARY SCHOOL PARKING LOT)**
- **RE-ENTRY WITH SCBA WILL OCCUR IN 15 MINUTE SHIFTS AT THE DIRECTION OF THE IC UNTIL IC DETERMINES PROBLEM HAS BEEN RESOLVED OR ESD IS ACTIVATED)**

**CALL 911  
IF INJURY OR  
DEATH  
FOR EMERGENCY  
ASSISTANCE**

**ONCE RESOLVED & MONITORED  
LEVELS IN PLANT ARE LESS THAN 10  
PPM RETURN TO PLANT**

### IF CONSTANT ALARM SOUNDS FOR 15 MINUTES

- **ACTIVATE PLANT EMERGENCY SHUT DOWN (ESD)**
- **ACTIVATE FULL H<sub>2</sub>S PLAN WITH NOTIFICATIONS & REPORTING (FOLLOW LEVEL 3 RESPONSE)**

**NOTIFY NMOCD WITHIN  
ONE HOUR  
MAKE OTHER AGENCY  
REPORTS AS PER H<sub>2</sub>S  
PLAN**

## LEVEL 3 RESPONSE

### WORST CASE SCENERIO AND/OR CATASTROPHIC RELEASE FROM FIRE AND/OR EXPLOSION

- ALL PERSONNEL EVACUATE TO ASSEMBLY AREA 2 IF MONITORED LEVELS ARE LESS THAN 10 PPM
- EVACUATE PRAXAIR
- IF MONITORED LEVELS AT ASSEMBLY AREA 2 ARE GREATER THAN 10 PPM; EVACUATE TO ASSEMBLY AREA 3 (ELEMENTARY SCHOOL PARKING LOT)
- IMPLEMENT FULL H<sub>2</sub>S PLAN WITH ALL NOTIFICATIONS
- NOTIFY LOCAL FIRE, POLICE AND EMERGENCY SERVICES

ONCE RESOLVED & MONITORED  
LEVELS IN PLANT ARE LESS THAN 10  
PPM RETURN TO PLANT

### IF CONSTANT ALARM SOUNDS FOR 15 MINUTES

- ACTIVATE PLANT EMERGENCY SHUT DOWN (ESD)
- RE-ENTRY WITH SCBA WILL OCCUR IN 15 MINUTE SHIFTS AT THE DIRECTION OF THE INCIDENT COMMANDER (IC) UNTIL IC DETERMINES PROBLEM HAS BEEN IDENTIFIED OR REPAIRED

# APPENDIX G

## EMERGENCY CALL LIST

### SAN JUAN GAS PLANT EMERGENCY CALL LIST

#### ENTITIES WITH IN THE 100- PPM ROE

Name	Address	Contact Person	Phone Number
<b>Riverview Golf Course</b>	583 County Rd 6100 Kirtland, NM 87417		505-598-0140
<b>BHP Mining</b>	16 Miles West of Farmington, NM San Juan County Road RD6800	Dave Hales, Safety Manager	505-598-2311  505-486-1612
<b>El Paso Natural Gas</b>	81 County Road 4900 Bloomfield, NM 87413		800-334-8047 (24 hr)
<b>Mid-America Pipeline Co. (Enterprise)</b>	3621 East Main Farmington, NM 87402		505-599-3276 505-599-3277 800-546-3482 (24 hr)
<b>Praxair</b>	101 County Road 6500 Bloomfield, NM 87417		505-598-0549 800-598-0549 (24 hr)
<b>XTO Energy</b>	2700 Farmington Ave. Farmington, NM 87401		505-324-1090
<b>San Juan College West*</b>	69 County Road 6500 Kirtland, NM 87417		505-598-5897

\*Note: The San Juan College West is not within the 100-ppm ROE but is approximately 468 ft outside the 100-ppm radius of exposure. Due to the near proximity, the San Juan College West will be included in this contingency plan.

#### ENTITIES WITH IN THE 500- PPM ROE

Name	Address	Contact Person	Phone Number
<b>Praxair</b>	101 County Rd 6500 Bloomfield, NM 87417		505-598-0549 800-598-0549 (24 hr)

**A. COMPANY INTERNAL NOTIFICATIONS  
SAN JUAN RIVER PLANT PERSONNEL**

NAME	TITLE	OFFICE No.	CELLULAR No.	HOME No.
Kent McEvers	Plant Superintendent	505-598-5601 ext. 15523	505-860-7208	505-326-4054
Rick Fetch	Plant Foreman	505-598-5601 ext. 15522	505-947-2416	505-324-6441
Arlyn Thorson	Maintenance Foreman	505-598-5601 ext. 15524	505-947-2417	505-326-6718
Bob McClain	Plant Operator	505-598-5601 ext. 15542	505-330-1966	505-325-8715
Brenda Wilson	Sr. Operations Specialist	505-598-5601 ext. 15521		505-325-6525
Andrew Adame	Plant Operator			505-360-7051
Chee Anderson	Plant Operator			505-326-1397
Glen Daniell	Plant Operator		505-860-7483	505-632-9705
Curtis Day	Plant Operator			505-801-4404
Johnny Foster	Plant Operator			505-801-5062
Frank Hale	Plant Operator		505-860-5897	505-598-9091
Bobby James	Plant Operator			505-598-5314
Melvin Jim	Plant Operator			505-368-4733
Charlie Barr	Mechanic		505-324-1100	505-330-2614
Jerry Darnell	Fieldman			505-632-2722
Ted Francis	Fieldman			505-564-2999
Kent Galyon	Fieldman		505-860-1875	970-565-1006
William Golbe	Mechanic		505-215-2517	505-598-9716
Charlie Medders	Mechanic		505-947-7039	505-598-5573
Corwyn Yazzie	Mechanic		505-793-2567	505-327-3286

**B. COMPANY INTERNAL NOTIFICATIONS  
CORPORATE PERSONNEL - THE WOODLANDS, TEXAS**

NAME	TITLE	OFFICE No.	CELLULAR No.	HOME No.
Mario Reyes	Operations Mgr	832-636-3234	713-816-5006	281-360-1084
Mike Ross	General Mgr	832-636-3431	832-381-0923	281-296-0385
Tony Marques	Engineering Mgr	832-636-7368		
Chuck Johnson	Commercial Develop. Mgr	832-636-7119		

David Ponikvar	S&H Mgr	832-636-3414	281-732-7887	281-374-8334
Julie Betik	Env & Reg Anal	832-636-2609	281-793-7705	281-320-2066
Eric Weaver	EHS Analyst	432-684-2808	432-413-2494	432-756-3493
Jerry Adams	EHS Mgr	832-636-8304	281-731-5931	281-363-4693
Mike Gray	EHS Director	832-636-2454	281-415-6964	936-271-9869

### C. COUNTY & LOCAL LAW ENFORCEMENT

AGENCY	DAYTIME / 24 HR. PHONE No.
Law Enforcement Dispatch	911
San Juan County Sheriff	505-334-6622
Farmington Police	505-327-0222
Navajo Tribal Police	505-368-4333
Ute Mountain BIA	303-565-8471
New Mexico Highway Patrol	505-325-7547
New Mexico FBI	505-325-8631
San Juan County LEPC	505-334-1180
BLM Farmington Office	505-599-8900

### D. MEDICAL SERVICES

AGENCY	EMERGENCY SERVICE	PHONE No.
Emergency Dispatch	Fire & Ambulance	911
San Juan County Fire Marshall	Fire Department	505-334-9431
San Juan Regional Medical Center	Hospital	505-325-5011
Emergency Trauma Lifeline Service - Farmington		505-325-5602
Dr. Robert C. Rhein	Doctor	505-327-4867
Dr. Ken Crider	Doctor	505-327-4439
San Juan Air Care Farmington	Air Ambulance	800-452-9990

**E. FEDERAL NOTIFICATIONS**

AGENCY	DAYTIME / 24 HR. PHONE No.
National Response Center	800-424-8802
EPA Region 8	800-227-8917
OSHA	800-321-6742
OSHA Area Office New Mexico	505-827-4230
DOT	800-424-8802
BLM Farmington	505-599-8900

**F. NEW MEXICO STATE NOTIFICATIONS**

AGENCY	DAYTIME / 24 HR. PHONE No.
New Mexico One Call	800-321-2537
New Mexico Oil Conservation Division	505-334-6178
New Mexico Environmental Department	505-476-4300
New Mexico Emergency Response Commission	505-476-9681
New Mexico Public Utilities Commission	505-490-2375
New Mexico State Patrol	505-325-7547

**G. CONTRACTORS**

CONTRACTOR	CONTACT	OFFICE No.	CELLULAR No.
<b>Contractors - General</b>			
IMI Construction		505-325-5005	
Weeminuche Construction	Benton Dean	970-565-7430	

<b>Service Companies Supplies</b>			
Noels Inc		505-327-3375	
ESSO Pipe & Supply		505-325-7568	
Air Gas		505-325-6660	
DXP	Steve Martinez	505-326-3333	
DeWees Tool & Supply		505-326-5491	
<b>Emergency Response &amp; Safety Services</b>			
ChemTrec		800-424-9300	
Hands On Safety Service		505-325-4218	
<b>Electrical Services</b>			
Four Corners Electric		505-325-1459	
B&G Electric		505-325-7511	

#### H. OTHER PRODUCERS

COMPANY	CONTACT	OFFICE No.	CELLULAR No.
Burr Oil & Gas	Deana	505-325-1701	
Conoco/Burlington	Jerry Lodermilk		505-320-0452
	Rena	505-330-2946	
DJ Simmons Company	John Byrom	505-326-3753	
Elm Ridge Resources	Office	505-334-3476 ext 210	
	Terry Lindeman	972-749-6941	
El Paso Natural Gas		505-632-6000	
	Emergency Number	800-334-8047	
Nacogdoches Oil & Gas	Aaron	936-697-3750	
Resolute Natural Resources	Office	970-564-5200	
	Montezuma Creek	435-651-3682	
	Roger Atcity		435-444-0001
Rim Southwest Corporation	Thelma Dee	435-651-4391	
XTO Energy Inc.	Office	505-324-1090	

	John Weaver		505-330-3278
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**I. OTHER RESOURCES**

<b>COMPANY</b>	<b>OFFICE No.</b>	<b>Website</b>
National Weather Service Albuquerque, New Mexico	505-243-0702	
Farmington Four Corners Regional Airport – National Weather Service		<a href="http://weather.noaa.gov/weather/current/KF&lt;br/&gt;MN.html">http://weather.noaa.gov/weather/current/KF MN.html</a>
Additional Weather Sites		<a href="http://www.accuweather.com">www.accuweather.com</a> <a href="http://www.wunderground.com">www.wunderground.com</a> <a href="http://www.weather.com">www.weather.com</a>

# APPENDIX H

## H<sub>2</sub>S PLAN DISTRIBUTION LIST

**New Mexico Oil & Gas Conservation Division**

**New Mexico Environment Department**

**New Mexico Department of Public Safety (Farmington Office)**

**New Mexico Department of Public Safety (State Office)**

**Farmington Fire Department**

**San Juan County Fire Department**

**San Juan County Sheriff Department**

**San Juan County Emergency Manager**

**San Juan County LEPC**

**Farmington Police**

**San Juan Regional Medical Center**

**San Juan Plant Office**

**Anadarko Petroleum Corporate Office**

**APPENDIX C - SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN**

**SPILL PREVENTION, CONTROL AND  
COUNTERMEASURE PLAN**

PREPARED FOR:

**ANADARKO PETROLEUM CORPORATION**

San Juan River Area  
99 County Road 6500  
Kirtland, New Mexico 87417

PLAN TYPE:

**§112.9 Requirements for Onshore Production Facilities**

**IF AN EMERGENCY OR SPILL,  
CONTACT**

**San Juan River Area AT 505-598-5601 OR**

**Kent McEvers AT +1 505/598-5601**

**AND REFER TO SECTION A.2. FOR SPILL REPORTING  
AND RESPONSE PROCEDURES**



## **LIST OF FACILITIES COVERED BY THIS PART A**

- Barker Creek Compressor Station
- Four Corners Compressor Station
- Salty Dog #2 Compressor Station
- San Juan River Gas Plant

## ACTION ITEM SUMMARY

Throughout this Spill Prevention, Control and Countermeasure (SPCC) Plan (the Plan), items that require specific attention because of inspection, training and recordkeeping requirements, are presented in bold print and underlined. These 'Action Items' are summarized below.

### PART A – GENERAL PLAN REQUIREMENTS

- **Section A.1.1. – (At all times)** Maintain a complete copy of the SPCC Plan at the nearest field office.
- **Section A.1.3. – (After change to a Facility)** The SPCC Plan will be revised whenever there are design, construction, operation, or maintenance changes to a Facility. See Log of Plan Review and Amendments.
- **Section A.1.3. – (Every 5 years)** Management must review, evaluate and re-certify the Plan for its adequacy.
- **Section A.1.5. - (At all times)** Inspection procedures, tests and records, signed by the appropriate supervisor or inspector, will be kept with the SPCC Plan for a period of no less than three years.
- **Section A.1.5. – (Annual)** Inspection of SPCC Facilities (e.g. bulk storage containers, oil-filled equipment, oil and oily-water containing process units, and containment structures) will be conducted.
- **Section A.1.6. - (Prior to assignment of responsibilities)** All oil-handling personnel will be trained in discharge prevention and spill response prior to the assignment of job responsibilities.
- **Section A.1.6. – (Annual)** Discharge prevention briefings for all oil-handling personnel will be conducted.
- **Oil Spill Contingency Plan and/or Facility Response Plan will be updated on an as-needed basis**

### PART B – FACILITY INFORMATION

- **Section B.1.5.1. - (Annual)** Inspection of aboveground piping will be conducted.
- **Section B.1.8. - (After repair or change)** Field constructed containers must be reevaluated for brittle fracture failure potential.
- **Section B.1.10. - (Each drainage/discharge event)** All discharges of stormwater from secondary containment must be evaluated and recorded.

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LIST OF FACILITIES COVERED BY THIS PART A  
ACTION ITEM SUMMARY  
TABLE OF CONTENTS  
LOG OF PLAN REVIEW AND AMENDMENTS – PART A  
FEDERAL REGULATORY REQUIREMENTS / SPCC PLAN CROSS-REFERENCE

### **PART A – GENERAL PLAN REQUIREMENTS**

- A.1. GENERAL INFORMATION
  - A.1.1. Plan Copy [§112.3(e)]
  - A.1.2. Management Approval [§112.7]
    - A.1.2.1. Designated Person Accountable for Oil Spill Prevention at the Facility [112.7(f)(2)]
  - A.1.3. Amendment of Plan by Owner or Operator [§112.5]
  - A.1.4. Oil Spill Contingency Plan [§112.7(d)]
  - A.1.5. Inspections, Tests And Records [§112.7(e), §112.9(b)(2), (c)(3), (d)(1) and (2)]
  - A.1.6. Personnel Training [§112.7(f)]
  - A.1.7. Security [§112.7(g)]
  - A.1.8. Conformance with State Requirements [§112.7(j)]
- A.2. SPILL REPORTING AND RESPONSE [§112.7(a)]
  - A.2.1. Emergency Contact Information [§112.7(a)(3)(vi)]
  - A.2.2. Spill Reporting Requirements and Amendment of Plan by Regional Administrator [§112.4(a), §112.7(a)(4) and §112.7(a)(5)]
    - A.2.2.1. Spill Reporting and Response Requirements
  - A.2.3. Emergency Response Procedures [§112.7(a)(3)(iv) and (a)(5)]
    - A.2.3.1. Spill Discovery and Response
    - A.2.3.2. Spill Response Resources
  - A.2.4. Recovered Materials Management [§112.7(a)(3)(v)]
- A.3. ONSHORE WORKOVER FACILITIES [§112.10]
  - A.3.1. Mobile Equipment and Containment [§112.10 (b) and (c)]
  - A.3.2. Blowout Prevention [§112.10 (d)]
- A.4. SUBSTANTIAL HARM DETERMINATION [§112.20]
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- Figure A-1 Emergency Response Flowchart and Responsibilities
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### APPENDICES

#### Appendix A Forms

- Spill Report Form
- Regional Administrator Reporting Form
- Annual SPCC Inspection Checklist
- SPCC Drainage Inspection and Discharge Log

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##### B.1. FACILITY NAME AND LOCATION [§112.7(a)(3)]

- B.1.1. Designated Person at Facility [§112.7(f)(2)]
- B.1.2. Professional Engineer Certification [§112.3(d)]

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- B.1.3. Facility Conformance with SPCC Rule [§112.7(a)(1) and (a)(2)]
- B.1.4. Facility Description [§112.7(a)(3)]
- B.1.5. Facility Transfer Operations [§112.9(d)]
  - B.1.5.1. Aboveground Piping and Appurtenance Protection and Examination [§112.9(d)(1)]
  - B.1.5.2. Produced Water Disposal Facilities [§112.9(d)(2)]
  - B.1.5.3. Flowline Maintenance Program [§112.9(d)(3)]
  - B.1.5.4. Loading/Unloading Racks [§112.7(h)]
- B.1.6. Facility Storage and Bulk Storage Containers [§112.7(a)(3)(i), 112.7(i) and 112.9(c)]
  - B.1.6.1. Tank Compatibility with Contents [§112.9(c)(1)]
  - B.1.6.2. Engineer or Update Each Container [§112.9(c)(4)]
- B.1.7. Fault Analysis [§112.7(b)]
- B.1.8. Brittle Fracture Evaluation [§112.7(i)]
- B.1.9. Secondary Containment [§112.7(c); §112.7(k) and §112.9(c)(2)]
- B.1.10. Oil Production Facility Drainage [§112.9(b)(1) and (b)(2)]

Table B-1 Site Specific Data and Containment Calculations

### FIGURES

- Figure B-1 Facility Diagram
- Figure B-2 Facility Map (optional)

## LOG OF PLAN REVIEW AND AMENDMENTS – PART A

### NON-TECHNICAL AMENDMENTS

- Non-technical amendments are not certified by a Professional Engineer.
- Examples of changes include, but are not limited to, phone numbers, name changes, or any non-technical text change(s).

### TECHNICAL AMENDMENTS

- Technical amendments are certified by a Professional Engineer (§112.5(c)).
- Examples of changes include, but are not limited to, commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or addition/deletion of standard operation or maintenance procedures related to discharge prevention measures. It is the responsibility of the field to determine, and confirm with the regulatory authority as necessary, what constitutes a technical amendment. The preamble of the rule states that an amendment is required only “when there is a change that materially affects the facility’s potential to discharge oil” (67 FR 47091).
- An amendment made under this section will be prepared within six (6) months of the change and implemented as soon as possible but not later than six (6) months following preparation of the amendment.
- Technical Amendments affecting various pages within the Plan will require P.E. certification of the Plan and will be documented on the log form below.

### MANAGEMENT REVIEW

- Management will review this SPCC Plan at least every five (5) years and document the review on the form below (§112.5(b)).
- By signature below, signor confirms that management has completed a review and evaluation of this SPCC Plan.

Review/ Amend Date	Signature* (Specify)	Amend Plan (will/will not)	Description of Review/Amendment	Affected Page(s)	P.E. Certification (Y/N)

\*Typically signed by Manager, Professional Engineer or Plan Reviewer

Area Name: San Juan River Area

**FEDERAL REGULATORY APPLICABILITY / SPCC PLAN CROSS-REFERENCE**

Citation	Description	Heading (Page)	
		Part A	Part B
Subpart A	Applicability, Definitions, and General Requirements for All Facilities and All Types of Oil	(See Below)	
§112.3(d)	Professional Engineer Certification		B.1.2.
§112.3(e)	Plan Copy	A.1.1.	
§112.4	Amendment of SPCC Plan by Regional Administrator	A.2.2.	
§112.5	Amendment of SPCC Plan by Owners or Operators	A.1.3., (vi)	(B-2)
§112.7	General requirements for SPCC Plans for all facilities and all oil types	A.1., (vii)	
§112.7(a)	General requirements: discussion of facility's conformance with rule requirements; deviations from Plan requirements; facility characteristics that must be described in the Plan; spill reporting information in the Plan; emergency procedures	A.2., A.2.1., A.2.2., A.2.3., A.2.4.	B.1., B.1.3., B.1.4., B.1.6.
§112.7(b)	Fault analysis		B.1.7.
§112.7(c)	Secondary containment		B.1.9.
§112.7(d)	Contingency planning	A.1.2., A.1.4.	
§112.7(e)	Inspections, tests, and records	A.1.5.	
§112.7(f)	Employee training and discharge prevention procedures	A.1.6.	B.1.1.
§112.7(g)	Security (excluding oil production facilities)	A.1.7.	
§112.7(h)	Loading/unloading (excluding offshore facilities)		B.1.5.4.
§112.7(i)	Brittle fracture evaluation requirements		B.1.6., B.1.8.
§112.7(j)	Conformance with State requirements	A.1.8.	
§112.7(k)	Qualified Oil-filled Operational Equipment		B.1.9.
Subpart B	Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)	(See Below)	
§112.8	Requirements for onshore facilities (excluding production facilities)	NA	NA
§112.9	Requirements for onshore production facilities	(See Below)	
§112.9(a)	General and specific requirements	(See Below)	
§112.9(b)	Oil production facility drainage	A.1.5.	B.1.10.
§112.9(c)	Oil production facility bulk storage containers	A.1.5.	B.1.6., B.1.9.
§112.9(d)	Facility transfer operations, oil production facility	A.1.5.	B.1.5.
§112.10	Requirements for onshore oil drilling and workover facilities	A.3.	NA
§112.11	Requirements for offshore oil drilling, production, or workover facilities	NA	NA
Subpart C	Requirements for Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils, Including Oils from Seeds, Nuts, Fruits, and Kernels	(See Below)	
§112.12	Requirements for onshore facilities (excluding production facilities)	NA	NA
§112.13	Requirements for onshore oil production facilities	NA	NA
§112.14	Requirements for onshore oil drilling and workover facilities	NA	NA
§112.15	Requirements for offshore oil drilling, production, or workover facilities	NA	NA
Subpart D	Response Requirements	(See Below)	
§112.20	Facility response plans	A.4., A.5.	
§112.21	Facility response training and drills/exercises	NA	NA

# SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

## ANADARKO PETROLEUM CORPORATION San Juan River Area PART A – GENERAL PLAN REQUIREMENTS

### A.1. GENERAL INFORMATION

The regulations requiring preparation of SPCC Plans were revised by EPA on July 17, 2002 and December 26, 2006. The SPCC regulations are intended to prevent the discharge of oil into or upon the navigable waters of the United States. The regulations, which are codified in 40 CFR 112 (each relevant regulatory citation is identified by brackets), require that facilities that have the potential to impact navigable waters and with aboveground oil storage capacity of 1,320 gallons or more, exclusive of exempt containers, prepare and implement an SPCC Plan.

This Plan is presented in two parts: (1) a Part A which contains Area-specific information that is associated with all of the Facilities within that Area and (2) a Part B for each Facility in the Area that contains the SPCC information specific to that Facility. Thus, Part A in its entirety is fully incorporated into each Part B and each Part B relies on and incorporates the information contained in Part A. In accordance with 40 CFR 112, a Cross-Reference Table is included in Part A of this Plan and indicates which provisions are located in the Part A and/or Part B. The Table of Contents for this Plan also serves as a cross-reference.

#### A.1.1. Plan Copy [§112.3(e)]

A complete copy of the SPCC Plan will be maintained either at the facility, if normally attended at least four hours per day, or at the nearest manned office and will be available for onsite review during normal working hours.

#### A.1.2. Management Approval [§112.7(d)]

I hereby certify that this document and all attachments have full management approval and will be fully implemented under my direction or supervision. Based on my inquiry of the person or persons who manage the Facilities, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Should a discharge occur, Management is committed to provide the necessary manpower, equipment and resources required to expeditiously control and remove any harmful quantity of oil discharged.

Name: Mario Reyes

Signature: \_\_\_\_\_

Title: Operations Mgr

Date: \_\_\_\_\_

#### A.1.2.1. Designated Person Accountable for Oil Spill Prevention at the Facility [112.7(f)(2)]

The following Designated Person is accountable for discharge prevention and reports to the management personnel listed above.

Name: Kent McEvers

Title: Area Supt

#### A.1.3. Amendment of Plan by Owner or Operator [§112.5]

The SPCC Plan will be revised whenever there is a change to facility design, construction, operation, or maintenance that materially affects the Facility's potential for discharge as described in 40 CFR 112.1(b) and/or as described in the Log of Plan Review and Amendments of this Plan. As required by the regulations, the Plan will be revised within six (6) months of such facility change.

All amendments will be properly authorized by Facility management and will be implemented as soon as possible, but not later than six (6) months following the preparation of the amendment. Technical amendments will be certified by a Professional Engineer as required by 40 CFR 112.5(c) and kept as an attachment to this plan. The completion of the Plan reviews will be documented on Log of Plan Review and Amendments attached to the Plan.

Facility management will review and evaluate the entire Plan for its adequacy at least once every five (5) years. At the conclusion of this review, management must affirmatively document the review by completing the Log of Plan Review and Amendments.

If as a result of this review and evaluation, the Plan requires amendment, it must be amended within six (6) months of the completion of the review to include more effective prevention and control technology, if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge as described in 40 CFR 112.1(b).

#### A.1.4. Oil Spill Contingency Plan [§112.7(d)]

The operator has determined that for its bulk storage containers and most process vessels, the use of containment and/or diversionary structures to prevent discharged oil from reaching navigable waters is practical and effective at the facilities covered under this Part A. The operator has implemented an Oil Spill Contingency Plan for those facilities that have wellheads, oil-filled operating equipment, truck loading areas, process vessels, flowlines and gathering lines not equipped with secondary containment, or where secondary containment is insufficient. The Oil Spill Contingency Plan serves as a written commitment of manpower and resources as discussed in each facility's SPCC Part B, Section B.1.9. The facility is visited on a frequent basis and any spills or accidental releases of oil are properly cleaned up.

#### **A.1.5. Inspections, Tests And Records [§112.7(e), §112.9(b)(2), (c)(3), (d)(1) and (2)]**

Inspection procedures and a record of the inspections and tests will be kept with the Plan for a period of three years. If during any inspection, equipment or a containment system is found to be malfunctioning, resulting in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts, the tank or structure will be removed from service and appropriate repairs completed.

A documented visual inspection for every bulk storage container system, oil and water containing process unit, and containment structure will be completed annually. Tank, heater treater, separator and other container inspections will seek out evidence of wear, defect, and releases in the oil and water containing units and their support system. Inspections of containment areas will seek out general damage, breach of the floor, breach of the walls and releases. Defects discovered in the course of the inspections will be repaired as soon as practicable. See Appendix A for sample Annual Inspection forms.

#### **A.1.6. Personnel Training [§112.7(f)]**

Appropriate oil-handling personnel will be trained in discharge prevention and spill response prior to the assignment of job responsibilities. Training will be completed under the charge of the Designated Person, as identified in Section A.1.2.1 of this Plan, (Designated Person) or a qualified, designated representative. Training may be done in conjunction with other materials handling training. At a minimum the training will include:

- Operation and maintenance of equipment to prevent discharges;
- Discharge emergency protocols;
- Applicable pollution control laws, rules, and regulations;
- General Facility operations; and
- The contents of the SPCC Plan.

A discharge prevention briefing for appropriate oil-handling personnel will be scheduled at least annually (this may be done in conjunction with other required annual training) and will be documented in the Area training logs. At a minimum, annual briefings will include:

- The contents of the SPCC Plan;
- Descriptions of known discharges or failures and their corrective actions;
- Malfunctioning components; and
- Recently developed precautionary measures.

#### **A.1.7. Security [§112.7(g)]**

The facility is an oil production facility and therefore, this provision is not applicable.

### **A.1.8. Conformance with State Requirements [§112.7(j)]**

This SPCC Plan conforms to all State rules, regulations, and guidelines. Appropriate state reporting guidelines are provided in the Oil Spill Contingency Plan.

## **A.2. SPILL REPORTING AND RESPONSE [§112.7(a)]**

Pursuant to Section 112.2, the term 'discharge' means 'spilling, leaking, pumping, pouring, emitting emptying or dumping of oil'. For the purpose of this Plan the terms discharge, spill and release shall be synonymous. Additional information with regard to spill reporting and response can be found in the Oil Spill Contingency Plan.

### **A.2.1. Emergency Contact Information [§112.7(a)(3)(vi)]**

The emergency contact lists for responding to spills are provided in the Oil Spill Contingency Plan.

### **A.2.2. Spill Reporting Requirements and Amendment of Plan by Regional Administrator [§112.4(a), §112.7(a)(4) and 112.7(a)(5)]**

The requirements for spill notification and reporting to local, state, and/or federal officials depend upon the nature and extent of the spill. Notification of and reporting to federal, state and local agencies may be required as referenced in the Oil Spill Contingency Plan. A copy of the spill report form is provided in Appendix A and should be used to assist in meeting the reporting requirements identified below. Non-reportable spill events must be addressed immediately by containing, removing and disposing of the released material according to applicable regulations.

Also note that there are special reporting requirements for facilities that experience reportable spills to navigable waters as referenced in 40 CFR 112.1(b) of 1,000 gallons (238 bbls) or more or that experience two (2) reportable spills as reference in 40 CFR 112.1(b) of greater than 42 gallons (1 bbls) each within a 12-month period. Those facilities meeting one or both of these criteria are required to submit a report to the Regional Administrator within 60 days of the spill event (see Regional Administrator Reporting Form in Appendix A).

After review of the information submitted, or after an on-site review of the Plan, the Regional Administrator may require an amendment to the Plan if the Regional Administrator finds that the Plan does not meet the requirements of 40 CFR 112 or if an amendment is necessary to prevent and contain discharges at the Facility.

#### **A.2.2.1. Spill Reporting and Response Requirements**

Following discovery of a spill, on-scene personnel should notify their Supervisor and/or the Designated Person as soon as practicable. If the situation allows, on-scene personnel should also attempt to control or eliminate the source of the spill.

A preliminary spill assessment is to be conducted by on-scene personnel to provide the Designated

Person with the information necessary to initiate the appropriate response. A Spill Report Form (see Appendix A) should be completed, provided to the Designated Person and include the following information:

- Date and time of incident;
- Type and estimated total quantity of material released;
- Source and cause of the release;
- Description of all affected media and assessment of environmental conditions such as precipitation, wind speed and direction, and temperature;
- Estimated spill destination and local topography;
- Assessment of immediate danger to human life or health or to the environment, including outside the Facility, and extent of damages or injuries, if any and
- Actions being used to stop, remove and mitigate the effects of the release.

### **A.2.3. Emergency Response Procedures [§112.7(a)(3)(iv) and (a)(5)]**

If a spill occurs, Facility personnel trained in accordance with the training requirements of this Plan, or their Contractors listed in the Oil Spill Contingency Plan, will respond as outlined in Figure A-1 Emergency Response Flowchart and Responsibilities.

#### **A.2.3.1. Spill Discovery and Response**

In the event of a release, the observer will move to a place of safety in relation to the spill. Only if trained to do so and if it is safe, the observer will take reasonable efforts to stop or control the source of the spill. The observer will immediately report the spill to their Supervisor and/or Designated Person. If necessary, the Designated Person, or his designee, will notify the On-Scene Commander to assess the situation and initiate response actions. The Designated Person, or his designee, will then determine if the spill is reportable, notify the appropriate Agencies, and provide the information listed on the Spill Reporting Form in Appendix A.

The spill will be isolated and cleaned up as directed by the Designated Person and/or On-Scene Commander. In general, the procedures to be used are as follows:

- Identify the material spilled and its source;
- Remove all sources of ignition;
- Take appropriate measures to stop the flow of material;
- Quickly determine the size and flow direction of the spill;
- If possible, contain the spill with equipment and materials located within the area;
- Determine if the spill can be handled by Facility personnel or whether an emergency clean-up contractor must become involved;

- Recover spilled material and dispose of properly; and
- Complete the Spill Reporting Form (Appendix A) as directed by the Designated Person and/or On-Scene Commander.

#### **A.2.3.2. Spill Response Resources**

The necessary response personnel, materials, contractors, and equipment are listed in the Oil Spill Contingency Plan and will be mobilized as needed to respond to each spill. Resources are as follows:

- Emergency Response Personnel - Manage and/or conduct emergency response actions. All emergency response personnel have full authority to implement response actions.
- Emergency Response Contractors - Emergency response personnel utilize emergency response contractors to supplement internal resources.
- Emergency Response Authorities - Emergency response personnel have access to a number of external emergency response authorities who can provide assistance during spill response events.
- Spill Response Equipment and Materials - Various spill response materials are maintained in the area of the Facility. These materials are stored either at the facility or supplied by contractors and are available for use by Company Emergency Response Personnel and Emergency Response Contractors.

#### **A.2.4. Recovered Materials Management [§112.7(a)(3)(v)]**

Following an emergency response incident, the On-Scene Commander and any involved contractors will ensure that any material recovered is properly characterized and managed in accordance with applicable regulations. Additionally, following the completion of spill response and cleanup activities, emergency equipment and supplies will be decontaminated and returned to storage or replaced, as appropriate.

### **A.3. ONSHORE WORKOVER FACILITIES [§112.10]**

This section applies to company owned workover rigs. Contracted workover rigs and associated rental equipment are not covered in this SPCC Plan. Contracted workover rigs and associated rental equipment will comply with SPCC regulations as required by the Master Service Agreement.

#### **A.3.1. Mobile Equipment and Containment [§112.10 (b) and (c)]**

Mobile workover equipment will be positioned as to prevent a discharge as described in 112.10(b). Catchment basins or diversion structures to intercept and contain discharges of fuel, crude oil, or oil based drilling fluid will be provided as appropriate. Where catchment basins or diversion structures are impracticable, the Oil Spill Contingency Plan will be utilized to prevent or minimize impacts.

**A.3.2. Blowout Prevention [§112.10 (d)]**

Blowout prevention (BOP) assemblies and well control systems capable of controlling the expected wellhead pressure will be installed before drilling below any casing point. When working over a well, a BOP and well control system will be used.

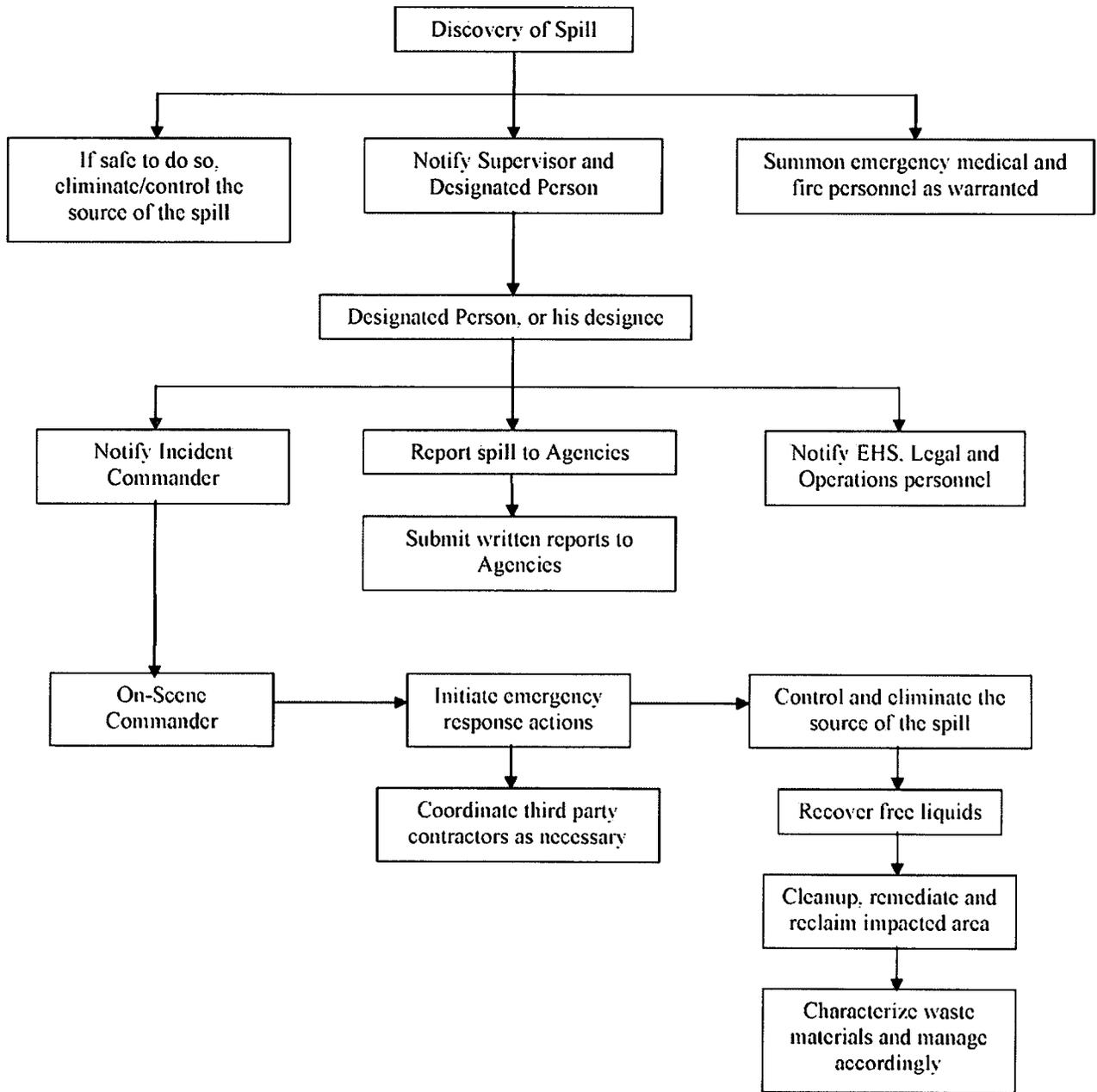
**A.4. SUBSTANTIAL HARM DETERMINATION [§112.20]**

A Substantial Harm determination has been conducted for all SPCC Facilities covered by this Part A. A certified Substantial Harm Checklist has been signed and attached as Figure A-2.

**A.5. FACILITY RESPONSE PLAN [§112.20]**

In accordance with 40 CFR 112.20, it has been determined that a Facility Response Plan is not required for any SPCC Facility covered by this Part A. To support this determination, a certified Substantial Harm Checklist has been signed and attached as Figure A-2.

**FIGURE A-1  
EMERGENCY RESPONSE FLOWCHART AND RESPONSIBILITIES**



## FIGURE A-2 SUBSTANTIAL HARM CRITERIA CHECKLIST [§112.20]

AREA NAME: San Juan River Area

AREA ADDRESS 99 County Road 6500  
Kirtland, New Mexico 87417

1. Do any of the facilities covered in this plan transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes \_\_\_\_\_ No X \_\_\_\_\_

2. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

Yes \_\_\_\_\_ No X \_\_\_\_\_

3. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula<sup>1</sup>) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Environments" (§10, Appendix E, 40 CFR 112 for availability) and the applicable Area Contingency Plan.

Yes \_\_\_\_\_ No X \_\_\_\_\_

4. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula<sup>1</sup>) such that a discharge from the facility would shut down a public drinking water intake<sup>2</sup>?

Yes \_\_\_\_\_ No X \_\_\_\_\_

5. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes \_\_\_\_\_ No X \_\_\_\_\_

### CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.

\_\_\_\_\_  
Name (please type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

From 40 CFR 112 Appendix C, Attachment C-II

<sup>1</sup> If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

<sup>2</sup> For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

**APPENDIX A**

**FORMS**

Spill Report Form  
Regional Administrator Reporting Form  
Annual SPCC Inspection Checklist  
SPCC Drainage Inspection and Discharge Log

**REGIONAL ADMINISTRATOR REPORTING FORM [§112.4(a)]**

When reporting a discharge under 40 CFR 112.4(a), the information listed in the Regional Administrator Reporting Form must be submitted to the Regional Administrator within 60 days. (Check as appropriate)

- This Facility has experienced a reportable spill as referenced in 40 CFR Part 112.1(b) of 1,000 gallons or more
- This Facility has experienced two (2) reportable spills as referenced in 40 CFR Part 112.1(b) of greater than 42 gallons each within a 12-month period.

FACILITY NAME AND LOCATION: \_\_\_\_\_

CONTACT PERSON (NAME, ADDRESS/PHONE NUMBER): \_\_\_\_\_

MAXIMUM STORAGE/HANDLING CAPACITY: \_\_\_\_\_

NORMAL DAILY THROUGHPUT: \_\_\_\_\_

CORRECTIVE ACTION/COUNTERMEASURES: \_\_\_\_\_

FACILITY DESCRIPTION (Include maps and facility diagrams as needed): \_\_\_\_\_

CAUSE OF DISCHARGE/FAILURE ANALYSIS: \_\_\_\_\_

PREVENTIVE MEASURES TAKEN: \_\_\_\_\_

\_\_\_\_\_  
Name (please type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

# SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN

## WESTERN GAS RESOURCES INC San Juan River Gas Plant PART B – FACILITY INFORMATION

### B.1. FACILITY NAME AND LOCATION [§112.7(a)(3)]

San Juan River Gas Plant

WINS No: N/A

Section: 1, Township: 29, Range: 15

County/Parish: San Juan State: New Mexico

Latitude: 36.758966 Longitude: 108.367494

#### Directions to the Facility:

From the intersection of State Highway 64 and County Road 6500 go north on County Road 6500 for 1 mile to plant entrance road. Turn west on plant entrance road, go approximately 0.3 miles to the plant main office.

#### B.1.1. Designated Person at Facility [§112.7(f)(2)]

Name: Kent McEvers

Title:

Area Supt

#### B.1.2. Professional Engineer Certification [§112.3(d)]

By means of this Professional Engineer Certification, I hereby attest to the following:

- I am familiar with the requirements of Title 40, Part 112 of the Code of Federal Regulations (40 CFR 112);
- That I, or my agent, has visited and examined the above referenced Facility;
- That this Spill Prevention, Control and Countermeasure Plan, Parts A and B, (the Plan) has been prepared in accordance with good engineering practice, including applicable industry standards, and with the requirements of 40 CFR 112;
- That procedures for inspections and testing have been established; and
- This Plan is adequate for the Facility.

Date: \_\_\_\_\_

Name: Roger Martin

Signature: \_\_\_\_\_

Company: Consulting Engineer

Registration No.: 62740

State: Texas

(Seal)

The Facility recognizes that, in accordance with 40 CFR 112.3(d)(2), engineer certification in no way relieves the Facility of the responsibility to prepare and fully implement the Plan.

## LOG OF PLAN REVIEW AND AMENDMENTS – PART B

### NON-TECHNICAL AMENDMENTS

- Non-technical amendments are not certified by a Professional Engineer.
- Examples of changes include, but are not limited to, phone numbers, name changes, or any non-technical text change(s).

### TECHNICAL AMENDMENTS

- Technical amendments are certified by a Professional Engineer (§112.5(c)).
- Examples of changes include, but are not limited to, commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or addition/deletion of standard operation or maintenance procedures related to discharge prevention measures. It is the responsibility of the field to determine, and confirm with the regulatory authority as necessary, what constitutes a technical amendment. The preamble of the rule states that an amendment is required only "when there is a change that materially affects the facility's potential to discharge oil" (67 FR 47091).
- An amendment made under this section will be prepared within six (6) months of the change and implemented as soon as possible but not later than six (6) months following preparation of the amendment.
- Technical Amendments affecting various pages within the Plan will require P.E. certification of the Plan and will be documented on the log form below.

### MANAGEMENT REVIEW

- Management will review this SPCC Plan at least every five (5) years and document the review on the form below (§112.5(b)).
- By signature below, signor confirms that management has completed a review and evaluation of this SPCC Plan.

Review/ Amend Date	Signature* (Specify)	Amend Plan (will/will not)	Description of Review/Amendment	Affected Page(s)	P.E. Certification (Y/N)

\*Typically signed by Manager, Professional Engineer or Plan Reviewer

Facility Name: San Juan River Gas Plant

### **B.1.3. Facility Conformance with SPCC Rule [§112.7(a)(1) and (a)(2)]**

This Plan is presented in two parts: (1) a Part A which contains Area-specific information that is associated with all of the Facilities within that Area and (2) a Part B for each Facility in the Area that contains the SPCC information specific to that Facility. Thus, Part A in its entirety is fully incorporated into each Part B and each Part B relies on and incorporates the information contained in Part A. In accordance with 40 CFR 112.7, a Cross-Reference Table is included in Part A of this Plan and indicates which provisions are located in the Part A and/or Part B.

As an onshore production facility, the following sections of SPCC regulations apply to this Facility: Sections 112.1 through 112.7 and 112.9. Sections 112.7(g), 112.8 and 112.11 do not apply because they specifically exempt production facilities or apply to offshore facilities. Section 112.10 is only applicable to those Facilities where the company is the owner and/or operator of an onshore oil drilling and workover facility. Sections 112.12 through 112.15 are not applicable because the Facility does not store, use or process animal fats and oils and greases. Sections 112.20 and 112.21 do not apply because this facility is not required to maintain a Facility Response Plan.

The Facility is in conformance with all applicable requirements specified in 40 CFR 112.7 and 112.9 unless noted in Table B-1.

### **B.1.4. Facility Description [§112.7(a)(3)]**

The San Jaun Gas Plant is a natural gas treating and processing plant. Specific equipment includes a cryogenic processing skid, a liquid stabilizer, compressors, an amine treating unit, a sulfur recovery unit and a dehydration unit. Produced water and condensate storage tanks are located on the northwest portion of the property. Natural gas liquid product tanks are located on the east side of the property.

### **B.1.5. Facility Transfer Operations [§112.9(d)]**

#### **B.1.5.1. Aboveground Piping and Appurtenance Protection and Examination [§112.9(d)(1)]**

The Facility's aboveground piping is inspected annually for wear, failure and leakage. During the course of inspection, valves, joints and other connections will be assessed by the inspector, as well as external pipe supports. The Annual Inspection Checklist included in Part A, Appendix A will be utilized to guide and document the inspections. Completed checklist forms will be maintained with the Plan.

#### **B.1.5.2. Produced Water Disposal Facilities [§112.9(d)(2)]**

Applicable produced water disposal facilities will be inspected annually and after any event that could result in a system upset. These inspections will be completed using the Annual Inspection form in Appendix A.

#### **B.1.5.3. Flowline/Intra-Facility Gathering Line Maintenance [§112.9(d)(4)]**

The facility has a maintenance program for flowlines and intra-facility gathering lines.

#### **B.1.5.4. Loading/Unloading Racks [§112.7(h)]**

This Facility is not equipped with loading/unloading racks; therefore this section is not applicable.

### **B.1.6. Facility Storage and Bulk Storage Containers [§112.7(a)(3)(i), §112.7(i) and §112.9(c)]**

The Facility is equipped with the petroleum product containers listed in Table B-1.

#### **B.1.6.1. Tank Compatibility with Contents [§112.9(c)(1)]**

All containers are constructed in accordance with industry standards and are compatible with the material stored within and the conditions of storage. See Table B-1 for a listing of each container type.

#### **B.1.6.2. Engineer or Update Each Container [§112.9(c)(4)]**

'Good engineering practice' for tank batteries and other production facilities includes four elements: (1) providing adequate tank capacity to prevent overfilling, (2) using overflow equalizing lines, (3) providing vacuum protection to prevent collapse and (4) using high level sensors with a computerized control system. In accordance with 112.9(c)(4), every production facility must be equipped with at least one of four 'good engineering practice' elements. The Facility employs at least one of the above 'good engineering practices' which is identified on the Annual Inspection form.

### **B.1.7. Fault Analysis [§112.7(b)]**

Where there exists a reasonable potential for equipment failure, the Plan must include a prediction of the direction, rate of flow and total quantity of oil which could be discharged from each type of failure. For this Facility, potential discharges of oil include container and/or pipe failure and spills. Potential spill sources (equipment), total quantity of oil (capacity), rate of flow (rate) and prediction of the flow path (flow direction) are summarized in Table B-1.

### **B.1.8. Brittle Fracture Evaluation [§112.7(i)]**

**Field constructed containers which undergo repair or change of service that might affect the risk of a discharge due to brittle fracture or other catastrophe must be evaluated to confirm vulnerability to brittle fracture failure.** According to EPA SPCC Guidance for Regional Inspectors, Version 1.0 and API 653, "Tank Inspection, Repair, Alteration and Reconstruction", there is no brittle fracture concern for field-constructed containers with a maximum shell thickness of 0.5 inch or less. All field-constructed containers at this facility (identified in Table B-1) have a shell thickness of 0.5 inch or less, therefore brittle fracture evaluation is not applicable.

### **B.1.9. Secondary Containment [§112.7(c) and (d), §112.7(k), and §112.9(c)(2), (c)(5) and (d)(3)]**

All dikes, berms, catchment basins, retention ponds, drip pans and other secondary containment devices are constructed of material (i.e. metal, compacted earth, concrete, plastic, fiberglass) that is sufficiently impervious to contain oil. Secondary containment is considered practicable for the Facility with the exception of the following:

- Some flow-through process vessels (i.e., separators, heater treaters, line heaters, scrubbers) may not be provided with a means of secondary containment due to the small oil capacity of some vessels and their distance to waters of the U.S., the ineffectiveness of berms for a high pressure vessel which, in the most likely release scenario, would tend to spray a small quantity of mist possibly beyond the berm walls, and safety hazards (oil collecting around a fired vessel). Furthermore, these process vessels are generally located at facilities that are visited on a regular basis, therefore increasing the likelihood of spill discovery and response while the spill is still on location.
- Some small, shop-built, elevated storage tanks may not be provided with containment for the entire capacity of the tank plus sufficient freeboard for precipitation due to limited space and access problems. For these tanks, periodic integrity testing will be conducted. This integrity testing will consist of external visual inspections for early signs of deterioration and leakage. Visual inspections plus elevation of the tanks decreases the potential for corrosion. Any tanks found to be leaking will be repaired or replaced.
- Loading/unloading areas and other undiked areas within the facility may not be provided with secondary containment due to limited space and/or safety hazards. Also, all oil and produced water transfer operations are manned, which minimizes the chance of any offsite impact.
- Secondary containment for wellheads and associated piping is impracticable due to limited space and access problems for trucks and well work equipment.

Flowlines and intra-facility gathering lines typically do not have secondary containment. Additionally, some oil-filled operational equipment may not be provided with secondary containment. Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (i.e., those for pumps, compressors and other rotating equipment, including pumpjack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical

switches, and other systems containing oil solely to enable the operation of the device. An inspection or monitoring plan has been established for the oil-filled operational equipment that does not have secondary containment.

For the equipment and/or areas listed above, an Oil Spill Contingency Plan has been prepared and will be implemented in case of a spill.

A description of the secondary containment is provided in Table B-1 and in the facility diagram.

#### **B.1.10. Oil Production Facility Drainage [§112.9(b)(1) and (b)(2)]**

Small quantities of stormwater collected inside berms are typically lost through evaporation. Water accumulated in the secondary containment areas will be inspected prior to discharge to confirm that it does not pose a threat of a harmful discharge. A harmful discharge is defined as one that violates applicable water quality standards or causes a film or sheen upon or discoloration of surface water or adjoining shorelines.

Field drainage systems and road ditches will be visually inspected on a regular basis for accumulation of oil or oil impacted soil. Accumulations of oil will be recovered promptly and placed in the production system or taken to an approved disposal site. Discharges of stormwater will occur using the following procedures:

- Prior to discharge, water must be visually inspected for the presence of oil or oily sheen. If oil is present, water cannot be discharged and must be recovered and placed into the production system or taken to an approved disposal site.
- **All discharges of stormwater from secondary containment must be recorded.** The date of the discharge must be noted on the SPCC Drainage Inspection and Discharge Log form.

If the secondary containment is equipped with a drain, the drain must be closed and sealed when it is not in use. All secondary containment drains, if present, are shown on the facility diagram.

## TABLE B-1 SITE SPECIFIC DATA

FACILITY NAME: San Juan River Gas Plant

DATE: March 17, 2010

EQUIPMENT	CONTENTS	CAPACITY	TYPE	FIELD CONSTRUCTED	TYPE OF FAILURE	RATE (bbl/hr)	FLOW DIRECTION	CONTAINMENT
TK-1*	Condensate / Water	400.0	steel	No	Leak, Rupture, Overfill	400.0	NE	Northern
TK-2	Condensate	400.0	steel	No	Leak, Rupture, Overfill	400.0	NE	Northern
TK-3	Produced Water	400.0	steel	No	Leak, Rupture, Overfill	400.0	NE	Northern
T0-2 Surge Tank*	Condensate	430.0	steel	No	Leak, Rupture, Overfill	430.0	NE	Northern 2
TO-1 Piggled Liquids Receiver	Condensate / Water	350.0	steel	No	Leak, Rupture, Overfill	350.0	NE	Northern Area
TK-5	Diesel	7.0	steel	No	Leak, Rupture, Overfill	7.0	N	Products Storage
TK-6	Gasoline	7.0	steel	No	Leak, Rupture, Overfill	7.0	N	Products Storage
TK-7	Solvent	12.0	steel	No	Leak, Rupture, Overfill	12.0	N	Products Storage
TK-14*	Methanol	23.8	steel	No	Leak, Rupture, Overfill	23.8	N	Products Storage
TK-11	Diethanolamine	1048.0	steel	No	Leak, Rupture, Overfill	1048.0	N	Plant Area
TK-8901	Used Oil	23.8	steel	No	Leak, Rupture, Overfill	23.8	N	Plant Area
TK-8902	Engine Oil	23.8	steel	No	Leak, Rupture, Overfill	23.8	N	Plant Area
C-600	Engine Oil	12.0	steel	No	Leak, Rupture, Overfill	12.0	N	Plant Area
T-3	Y-Grade Product	1000.0	steel	No	Leak, Rupture, Overfill	1000.0	N	Plant Area
T-4	Y-Grade Product	1000.0	steel	No	Leak, Rupture, Overfill	1000.0	N	Plant Area
T-5	Y-Grade Product	1000.0	steel	No	Leak, Rupture, Overfill	1000.0	N	Plant Area
TK-8	Condensate / Water	143.0	steel	No	Leak, Rupture, Overfill	143.0	N	Plant Area
T-13	Condensate / Water	2381.0	steel	Yes	Leak, Rupture, Overfill	2381.0	N	Plant Area

T-17 Surge Tank	Glycol	20.0	steel	No	Leak, Rupture, Overfill	20.0	N	Plant Area
GV-500 Surge Tank	Glycol	53.4	steel	No	Leak, Rupture, Overfill	53.4	N	Plant Area
V-4106 Suction Scrubber	Produced Water	5.0	steel	No	Leak, Rupture, Overfill	5.0	N	Plant Area
V-5102 Suction Scrubber	Produced Water	28.33	steel	No	Leak, Rupture, Overfill	28.33	N	Plant Area
V-6 Inlet Scrubber	Produced Water	30.23	steel	No	Leak, Rupture, Overfill	30.23	N	Plant Area
V-5101 Suction Scrubber	Produced Water	28.33	steel	No	Leak, Rupture, Overfill	28.33	N	Plant Area
TK-13 Flare Knockout	Produced Water	71.4	steel	No	Leak, Rupture, Overfill	71.4	N	Plant Area
Lance Tank 1	Engine Oil	11.9	Steel	No	Leak, Rupture, Overfill	11.9	N	Plant Area
Lance Tank 2	Engine Oil	8.33	steel	No	Leak, Rupture, Overfill	8.33	N	Plant Area
Lance Tank 3	Methanol	8.33	steel	No	Leak, Rupture, Overfill	8.33	N	Plant Area
Steel Tank*	Used Oil	400.0	Steel	No	Leak, Rupture, Overfill	400.0	N	Used Oil

Total SPCC Volume: 9326.6 bbls

\*Largest container size used to determine amount of secondary containment required.

NA – Not Applicable

Northern

**(1) Calculate Total Dike Capacity**

Containment = Length x Width x Height

80 ft x 50 ft x 0.1 ft = 500 ft<sup>3</sup>

500 ft<sup>3</sup> x 7.48 gal/ft<sup>3</sup> x 1 bbl/42 gal = **89.1 bbl**

**(2) Calculate Net Dike Capacity**

Net Capacity = Total Capacity - Displacement

Displacement = Footprint x Dike Height

TK-1 displacement = (Pi/4) x 144 ft<sup>2</sup> x 0.1 ft = 14.1 ft<sup>3</sup>

TK-2 displacement = (Pi/4) x 144 ft<sup>2</sup> x 0.1 ft = 14.1 ft<sup>3</sup>

TK-3 displacement = (Pi/4) x 144 ft<sup>2</sup> x 0.1 ft = 14.1 ft<sup>3</sup>

TK-4 displacement = (Pi/4) x 144 ft<sup>2</sup> x 0.1 ft = 14.1 ft<sup>3</sup>

TK-5 displacement = (Pi/4) x 144 ft<sup>2</sup> x 0.1 ft = 14.1 ft<sup>3</sup>

TK-6 displacement = (Pi/4) x 144 ft<sup>2</sup> x 0.1 ft = 14.1 ft<sup>3</sup>

Net Capacity = 89.1 bbl - 7.6 bbl = **81.5 bbl**

### (3) Calculate Freeboard

Required Freeboard = Storm Event x Dike Footprint

The 24-hour 25-year storm event for the area is expected to produce 6 inches (0.5 ft) of precipitation.

$0.5 \text{ ft} \times 4000 \text{ ft}^2 = 2000 \text{ ft}^3$

$2000 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{356.2 \text{ bbl}}$

### (4) Calculate Excess Dike Capacity

Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container

$81.5 \text{ bbl} - 356.2 \text{ bbl} - 400 \text{ bbl} = \mathbf{-674.7 \text{ bbl of Excess Dike Capacity}}$

## Northern 2

### (1) Calculate Total Dike Capacity

Containment = Length x Width x Height

$80 \text{ ft} \times 35 \text{ ft} \times 0.2 \text{ ft} = 466.7 \text{ ft}^3$

$466.7 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{83.1 \text{ bbl}}$

### (2) Calculate Net Dike Capacity

Net Capacity = Total Capacity - Displacement

Displacement = Footprint x Dike Height

Net Capacity =  $83.1 \text{ bbl} - 0 \text{ bbl} = \mathbf{83.1 \text{ bbl}}$

### (3) Calculate Freeboard

Required Freeboard = Storm Event x Dike Footprint

The 24-hour 25-year storm event for the area is expected to produce 6 inches (0.5 ft) of precipitation.

$0.5 \text{ ft} \times 2800 \text{ ft}^2 = 1400 \text{ ft}^3$

$1400 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{249.4 \text{ bbl}}$

### (4) Calculate Excess Dike Capacity

Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container

$83.1 \text{ bbl} - 249.4 \text{ bbl} - 430 \text{ bbl} = \mathbf{-596.2 \text{ bbl of Excess Dike Capacity}}$

## Northern Area

This containment group is not included in containment calculations

## Products Storage

### (1) Calculate Total Dike Capacity

Containment = Length x Width x Height

$100 \text{ ft} \times 30 \text{ ft} \times 0.1 \text{ ft} = 375 \text{ ft}^3$

$375 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{66.8 \text{ bbl}}$

**(2) Calculate Net Dike Capacity**

Net Capacity = Total Capacity - Displacement  
Displacement = Footprint x Dike Height  
Net Capacity = 66.8 bbl - 0 bbl = **66.8 bbl**

**(3) Calculate Freeboard**

Required Freeboard = Storm Event x Dike Footprint  
The 24-hour 25-year storm event for the area is expected to produce 3 inches (0.2 ft) of precipitation.  
 $0.2 \text{ ft} \times 3000 \text{ ft}^2 = 750 \text{ ft}^3$   
 $750 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{133.6 \text{ bbl}}$

**(4) Calculate Excess Dike Capacity**

Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container  
 $66.8 \text{ bbl} - 133.6 \text{ bbl} - 23.8 \text{ bbl} = \mathbf{-90.6 \text{ bbl of Excess Dike Capacity}}$

Plant Area

This containment group is not included in containment calculations

Used Oil

**(1) Calculate Total Dike Capacity**

Containment = Length x Width x Height  
 $36 \text{ ft} \times 40 \text{ ft} \times 2 \text{ ft} = 2880 \text{ ft}^3$   
 $2880 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{512.9 \text{ bbl}}$

**(2) Calculate Net Dike Capacity**

Net Capacity = Total Capacity - Displacement  
Displacement = Footprint x Dike Height  
Steel Tank displacement =  $(\pi/4) \times 144 \text{ ft}^2 \times 2 \text{ ft} = 226.2 \text{ ft}^3$   
 $226.2 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = 40.3 \text{ bbl}$   
Net Capacity =  $512.9 \text{ bbl} - 40.3 \text{ bbl} = \mathbf{472.7 \text{ bbl}}$

**(3) Calculate Freeboard**

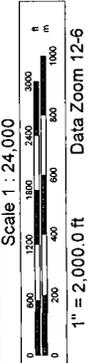
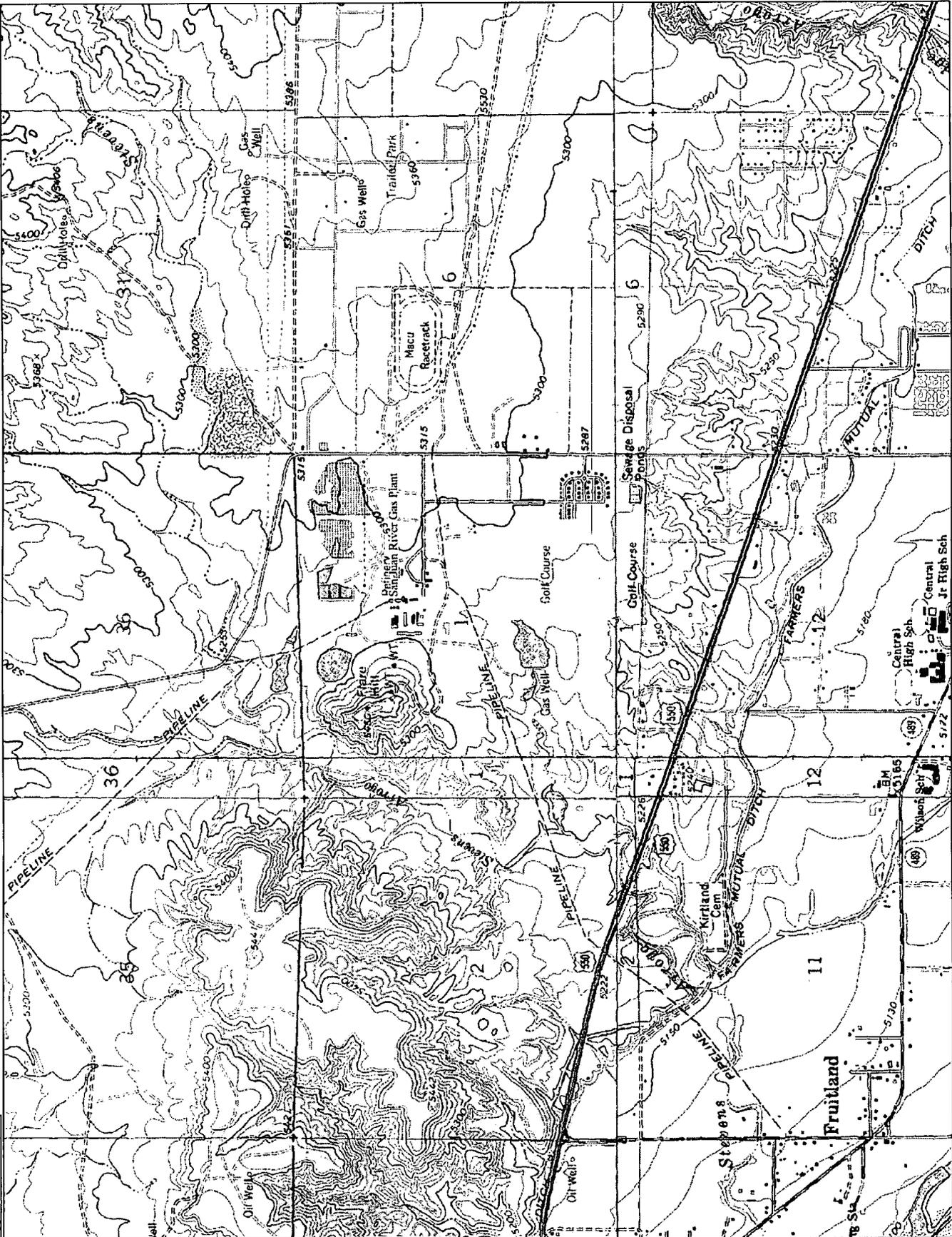
Required Freeboard = Storm Event x Dike Footprint  
The 24-hour 25-year storm event for the area is expected to produce 12 inches (1 ft) of precipitation.  
 $1 \text{ ft} \times 1440 \text{ ft}^2 = 1440 \text{ ft}^3$   
 $1440 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 \times 1 \text{ bbl/42 gal} = \mathbf{256.5 \text{ bbl}}$

**(4) Calculate Excess Dike Capacity**

Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container  
 $472.7 \text{ bbl} - 256.5 \text{ bbl} - 400 \text{ bbl} = \mathbf{-183.8 \text{ bbl of Excess Dike Capacity}}$

**FIGURES**

**FIGURE B-1**



**FIGURE B-2 (optional)**



**APPENDIX D - RMP**



Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

*San Juan River*



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
WASHINGTON, D.C. 20460

OFFICE OF  
SOLID WASTE AND EMERGENCY  
RESPONSE

**Western Gas Resources, Inc.**  
1099 - 18th St.  
Suite 1200  
Denver, CO 80202

**July 30, 2004**

**EPA Facility ID#: 1000 0013 0093**  
**Postmark Date: 06/21/2004**  
**Anniversary Date: 06/21/2009**

**NOTIFICATION LETTER: COMPLETE RMP**

The U.S. Environmental Protection Agency (EPA) received your Risk Management Plan (RMP) dated with the above postmark date. **This letter notifies you that your RMP is "complete" according to EPA's completion check.** The completion check is a program implemented by EPA to determine whether a submitted RMP includes the minimum amount of information every RMP must provide. The completion check does not assess whether a submitted RMP should have provided additional information or whether the information it provides is accurate or appropriate. In other words, it does not indicate that the RMP meets the requirements of 40 CFR Part 68.

Please note the anniversary date indicated above. Your RMP must be revised and updated by this date or earlier as required by 40 CFR §68.190. Please also note your EPA Facility ID number as identified at the top of this letter; all future Risk Management Plan submissions, corrections and other correspondence must include this number.

If you have any questions, please call one of the following numbers:

(1) For RMP rule interpretation questions, call the EPCRA Hotline at (800) 424-9346 or (703) 412-9810 (in the D.C. Metro area).

(2) For RMP\*Submit installation and software questions, or information on the status of your RMP, contact the RMP Reporting Center at (301) 429-5018, or write to the:

RMP Reporting Center  
P.O. Box 1515  
Lanham-Seabrook, MD 20703-1515

(3) For more information on the Risk Management Program, you can contact your Implementing Agency. Your Implementing Agency is  
**U.S. EPA Region 6, Superfund Division (6SF-RP), 1445 Ross Avenue, Dallas, TX, 75202-2733, Phone: 214-665-2292.**

Thank you for your cooperation in this matter.

Sincerely,

RMP Reporting Center

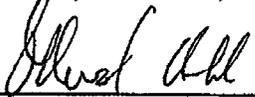
Enclosure:

Risk Management Plan (if submitted on paper)

CERTLP23.txt  
Certification Letter

Certification Statement for Program Level 2 & 3 Processes

To the best of the undersigned's knowledge, information, and belief formed after reasonable inquiry, the information submitted is true, accurate, and complete.

  
Signature

Ed Aabak  
Print Name

Executive VP Midstream  
Title

6/16/09  
Date

EPA Facility ID #1000 0013 0093

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

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## RMP Report for San Juan River Gas Plant

### Section 1. Registration Information

1.1 Source Identification: Facility ID: 12 There were no reportable accidents in the last 5 years.

- a. Facility Name: San Juan River Gas Plant
- b. Parent Company #1 Name: Western Gas Resources, Inc.
- c. Parent Company #2 Name:

1.2 EPA Facility Identifier: 1000 0013 0093

1.3 Other EPA Systems Facility ID:

1.4 Dun and Bradstreet Numbers (DUNS):

- a. Facility DUNS:
- b. Parent Company #1 DUNS: 606413052
- c. Parent Company #2 DUNS:

1.5 Facility Location Address:

- a. Street 1: 99 Road 6500
- b. Street 2:
- c. City: Kirtland d. State: NM e. Zip: 87417 -
- f. County: San Juan

Facility Latitude and Longitude:

- g. Lat. (dd.ddddd): 36.757500 h. Long. (ddd.ddddd): -108.367900
- i. Lat/Long Method: GO GPS - Unspecified
- j. Lat/Long Description: CE Center of Facility
- k. Horizontal accuracy measure (m): 20
- l. Horizontal Reference Datum Code: 002 North American Datum of 1983
- m. Source Map Scale Number:

1.6 Owner or Operator:

- a. Name: Western Gas Resources, Inc.
- b. Phone: (303) 452-5603
- Mailing address:
- c. Street 1: 1099 - 18th St. d. Street 2: Suite 1200
- e. City: Denver f. State: CO g. Zip: 80202 -

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**1.7 Name and title of person or position responsible for part 68 (RMP) implementation:**

- a. Name of person:
- b. Title of person or position: Executive VP Midstream
- c. Email address:

**1.8 Emergency contact:**

- a. Name: Kent McEvers
- b. Title: Area Manager
- c. Phone: (505) 326-4054
- d. 24-hour phone: (505) 860-7208
- e. Ext. or PIN:
- f. Email address: kmcevers@westerngas.com

**1.9 Other points of contact:**

- a. Facility or Parent Company E-Mail Address:
- b. Facility Public Contact Phone:
- c. Facility or Parent Company WWW Homepage Address:

**1.10 LEPC:** San Juan LEPC

**1.11 Number of full time employees on site:** 20

**1.12 Covered by:**

- a. OSHA PSM: Yes
- b. EPCRA 302: No
- c. CAA Title V: Yes Air operating permit ID: P-106

**1.13 OSHA Star or Merit Ranking:** No

**1.14 Last Safety Inspection (by an External Agency) Date:**

**1.15 Last Safety Inspection Performed by an External Agency:** Never had one

**1.16 Will this RMP involve predictive filing?:** No

**1.18 RMP Preparer Information:**

- a. Name:
- b. Telephone:
- c. Street1:

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d. Street2:

e. City:

f. State:

g. ZIP:

## Section 1.17 Process(es)

a. Process ID: 7 Program Level 3 NGL Storage

b. NAICS Code

211112 Natural Gas Liquid Extraction

c. Process Chemicals

c.1 Process Chemical (ID / Name)	c.2 CAS Nr.	c.3 Qty (lbs.)
7 Flammable Mixture	00-11-11	1,200,000
Pentane	109-66-0	
Isopentane [Butane, 2-methyl-]	78-78-4	
Butane	106-97-8	
Isobutane [Propane, 2-methyl]	75-28-5	
Propane	74-98-6	
Ethane	74-84-0	
Methane	74-82-8	

**Section 2. Toxics: Worst Case --- No Data To Report**

**Section 3. Toxics: Alternative Release --- No Data To Report**

**Section 4. Flammables: Worst Case**

**Flammables: Worst Case ID 6**

4.1 Chemical Name: Flammable Mixture

4.2 Model used: EPA's RMP\*Comp(TM)

4.3 Scenario: Vapor Cloud Explosion

4.4 Quantity released: 516,601 lbs

4.5 Endpoint used: 1 PSI

4.6 Distance to Endpoint: 0.60 mi

4.7 Estimated Residential population within distance to endpoint: 0

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**4.8 Public receptors within distance to endpoint:**

a. Schools:	No	d. Prisons/Correction facilities:	No
b. Residences:	No	e. Recreation areas:	Yes
c. Hospitals:	No	f. Major commercial, office, or industrial areas:	No
g. Other (Specify):			

**4.9 Environmental receptors within distance to endpoint:**

a. National or state parks, forests, or monuments:	No
b. Officially designated wildlife sanctuaries, preserves, or refuges:	No
c. Federal wilderness areas:	No
d. Other (Specify):	

**4.10 Passive mitigation considered:**

a. Blast walls:	No
b. Other (Specify):	

**4.11 Graphic file name:**

## Section 5. Flammables: Alternative Release

**Flammables: Alternative Release ID: 2**

5.1 Chemical Name:	Flammable Mixture		
5.2 Model used:	EPA's RMP*Comp(TM)		
5.3 Scenario:	Vapor Cloud Explosion		
5.4 Quantity released:	29,645 lbs		
5.5 Endpoint used:	1 PSI	LFL value:	% Volume

5.6 Distance to Endpoint:	0.20 mi
5.7 Estimated Residential population within distance to endpoint:	0

**5.8 Public receptors within distance to endpoint:**

a. Schools:	No	d. Prisons/Correction facilities:	No
b. Residences:	No	e. Recreation areas:	No
c. Hospitals:	No	f. Major commercial, office, or industrial areas:	No
g. Other (Specify):			

**5.9 Environmental receptors within distance to endpoint:**

a. National or state parks, forests, or monuments:	No
b. Officially designated wildlife sanctuaries, preserves, or refuges:	No

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What If: No Failure Mode and Effects Analysis: No  
Checklist: No Fault Tree Analysis: No  
What If/Checklist: Yes Other (Specify): modified what if/checklist  
HAZOP: No

c. Expected or actual date of completion of all changes from last PHA or PHA update: 02/10/2003

d. Major hazards identified:

Toxic release:	No	Contamination:	No
Fire:	Yes	Equipment failure:	Yes
Explosion:	Yes	Loss of cooling, heating, electricity, instrument air:	No
Runaway reaction:	No	Earthquake:	No
Polymerization:	No	Floods (flood plain):	No
Overpressurization:	No	Tornado:	No
Corrosion:	Yes	Hurricanes:	No
Overfilling:	Yes	Other (Specify):	

e. Process controls in use:

Vents:	Yes	Emergency air supply:	Yes
Relief valves:	Yes	Emergency power:	No
Check valves:	Yes	Backup pump:	Yes
Scrubbers:	Yes	Grounding equipment:	Yes
Flares:	Yes	Inhibitor addition:	Yes
Manual shutoffs:	Yes	Rupture disks:	No
Automatic shutoffs:	Yes	Excess flow device:	Yes
Interlocks:	No	Quench system:	No
Alarms and procedures:	Yes	Purge system:	No
Keyed bypass:	No	None:	No
		Other (Specify):	

f. Mitigation systems in use:

Sprinkler system:	No	Water curtain:	No
Dikes:	No	Enclosure:	No
Fire walls:	No	Neutralization:	No
Blast walls:	No	None:	Yes
Deluge system:	No	Other (Specify):	

g. Monitoring/detection systems in use:

Process area detectors:	Yes	None:	No
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Perimeter monitors: No Other (Specify):

**h. Changes since last PHA or PHA update:**

Reduction in chemical inventory:	No	Installation of perimeter monitoring systems:	No
Increase in chemical inventory:	Yes	Installation of mitigation systems:	No
Change process parameters:	No	None recommended:	No
Installation of process controls:	No	None:	No
Installation of process detection systems:	No	Other (Specify):	

7.5 Date of most recent review or revision of operating procedures: 11/14/2003

**7.6 Training:**

a. The date of the most recent review or revision of training programs: 11/14/2003

**b. The type of training provided:**

Classroom: No On the job: Yes Other (Specify):

**c. The type of competency testing used:**

Written test:	No	Observation:	Yes
Oral test:	Yes	Other (Specify):	
Demonstration:	Yes		

**7.7 Maintenance:**

a. The date of the most recent review or revision of maintenance procedures: 11/14/2003

b. The date of the most recent equipment inspection or test: 12/11/2003

c. Equipment most recently inspected or tested : thickness testing of piping and vessels

**7.8 Management of change:**

a. The date of the most recent change that triggered management of change procedures: 05/10/2004

b. The date of the most recent review or revision of management of change procedures: 08/01/2004

7.9 The date of the most recent pre-startup review: 07/03/2002

**7.10 Compliance audits:**

a. The date of the most recent compliance audit: 07/31/2003

b. Expected date of completion of all changes resulting from the compliance audit: 11/11/2003

**7.11 Incident investigation:**

a. The date of the most recent incident investigation (if any):

b. Expected or actual date of completion of all changes resulting from the investigation:

7.12 The date of the most recent review or revision of employee participation plans: 05/27/2004

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7.13 The date of the most recent review or revision of hot work permit procedures: 03/17/2004  
7.14 The date of the most recent review or revision of contractor safety procedures: 06/01/2004  
7.15 The date of the most recent evaluation of contractor safety performance: 06/01/2004

## Section 8. Prevention Program 2 --- No Data To Report

## Section 9. Emergency Response

### 9.1 Written Emergency Response (ER) Plan:

- a. Is facility included in written community emergency response plan? Yes  
b. Does facility have its own written emergency response plan? Yes

9.2 Does facility's ER plan include specific actions to be taken in response to accidental releases of regulated substance(s)? Yes

9.3 Does facility's ER plan include procedures for informing the public and local agencies responding to accidental releases? Yes

9.4 Does facility's ER plan include information on emergency health care? Yes

9.5 Date of most recent review or update of facility's ER plan: 05/20/2004

9.6 Date of most recent ER training for facility's employees: 11/14/2003

### 9.7 Local agency with which facility's ER plan or response activities are coordinated:

- a. Name of agency: Kirtland Fire Department  
b. Telephone number: (505) 598-5311

### 9.8 Subject to:

- a. OSHA Regulations at 29 CFR 1910.38: Yes  
b. OSHA Regulations at 29 CFR 1910.120: No  
c. Clean Water Act Regulations at 40 CFR 112: Yes  
d. RCRA Regulations at 40 CFR 264, 265, and 279.52: Yes  
e. OPA-90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, or 30 CFR 254: Yes  
f. State EPCRA Rules/Law: No  
g. Other (Specify):

## Executive Summary

Risk Management Plan (2004 update)  
Executive Summary for the San Juan River Gas Processing Facility

Accidental Release Prevention and Response Policies

The San Juan River Gas Plant has a longstanding commitment to worker and public safety. Our commitment is supported by the resources invested in accident prevention, personnel training and the consideration of safety issues in the design, construction, operation and maintenance of our facilities. Our policy is to implement reasonable controls to provide a safe operation and prevent foreseeable releases of regulated substances. However, if a release does occur, trained gas plant personnel will respond to control and contain the release.

Description of the Stationary Source and Regulated Substances

The San Juan River gas plant is located about 10 miles west of Farmington, New Mexico. The facility includes compression, amine gas treating, liquids stabilization, Claus sulfur recovery plant, dehydration, and a cryogenic liquid recovery plant. The plant produces a lean, dry residue gas stream, a mixed natural gas liquid stream (NGL) and a liquid sulfur stream. The liquid products contain ethane, propane, butanes, pentanes and heavier components. The plant handles regulated flammables such as ethane, propane, mixed butanes and mixed pentanes. The plant uses an amine process to remove carbon dioxide and hydrogen sulfide but does not contain threshold quantities of any materials classified as toxic. There are not toxic release scenarios to consider at the San Juan River plant.

Offsite Consequence Analysis Results

This narrative has been deleted as directed by the regulation.

General Accidental Release Prevention Program

The following is a summary of the accident prevention program in place at the plant. The processes at the plant are regulated by the Environmental Protection Agency's (EPA's) Risk Management Program (RMP) and the Occupational Safety and Health Administration's (OSHA's) process safety management (PSM) standard. The following summary addresses each of the OSHA PSM elements and describes the management system in place to implement the accident prevention program.

Employee Participation

The San Juan River gas plant requires employees to participate in all facets of process management and accident prevention. Examples of employee participation range from updating and compiling technical documents and chemical information to participating as a member of a process hazard analysis (PHA) team. Employees have access to all information created as part of the gas plant accident prevention program. Specific ways that employees are involved in the accident prevention program are documented in an employee participation plan that is maintained at the gas plant and addresses each accident prevention program element. In addition the gas plant has a number of initiatives under way that address process and employee safety issues. These include development of standardized operating procedures, incident investigation, management of change, safe work practices, our "Safe Start" program and participation in flowsheet reviews.

Process Safety Information

The San Juan River gas plant keeps a variety of technical documents that are used to help maintain safe operation of the process. These documents address chemical properties and associated hazards, limits for key process parameters, and equipment design basis/configuration information. The Operations group has been assigned responsibility for maintaining up-to-date process safety information. The location of these documents is readily available to help employees locate any necessary process safety information.

Chemical-specific information, including exposure hazards and emergency response/exposure treatment consideration, is provided in material safety data sheets (MSDSs). This information is supplemented by documents that specifically address known corrosion concerns and any known hazards associated with the inadvertent mixing of chemicals. For specific process areas, the gas plant has documented safety related limits for specific process parameters in operating manuals. The gas plant ensures that the process is maintained within these limits using process controls and monitoring instruments, highly trained personnel and protective instrument systems (e.g., automated shutdown systems).

The gas plant maintains numerous technical documents that provide information about the design and construction of process equipment. This information includes materials of construction, design pressure and temperature ratings, and electrical rating of equipment. This information in combination with written procedures and trained personnel, provides a basis for establishing inspection and maintenance activities, as well as for evaluating proposed process and facility changes to ensure that safety features in the process are not

compromised.

#### Process Hazard Analysis

The San Juan River gas plant has a comprehensive program to ensure that hazards associated with the various processes are identified and controlled. Within this program each process is systematically examined to identify hazards and ensure that adequate controls are in place to manage these hazards.

The San Juan River gas plant uses the process hazards analysis (PHA) technique to perform these evaluations. These reviews are conducted using a team of people who have operating and maintenance experience as well as engineering expertise. This team identifies and evaluates hazards of the process as well as accident prevention and mitigation measures. The team makes suggestions for additional prevention and/or mitigation measures when the team believes such measures are necessary.

If necessary the PHA team findings are forwarded to local and corporate management for resolution. Implementation of mitigation options in response to PHA findings is based on a relative risk ranking assigned by the PHA team. This ranking helps ensure that potential accident scenarios assigned the highest risk receive immediate attention.

To help ensure that the process controls and/or process hazards do not eventually deviate significantly from the original design safety features, the plant periodically updates and revalidates the hazard analysis results. These periodic reviews are conducted at least every 5 years and will be conducted at this frequency until the process is no longer operating. The results and findings from these updates are documented and retained.

#### Operating Procedures

The San Juan River gas plant maintains written procedures that address various modes of process operations, such as unit startup, normal operations, emergency shutdown and normal shutdown. These procedures can be used as a reference by experienced operators and provide a basis for consistent training of new operators. These procedures are periodically reviewed to ensure they are current and accurate. The procedures are also kept current and accurate by revising them as necessary to reflect changes made through the management of change process.

#### Training

To complement the written process operating procedures, the San Juan River gas plant has a comprehensive training program for all employees involved in operating a process. New employees receive basic training in gas plant operations if they are not already familiar with such operations. After successfully completing this training, a new operator is paired with a senior operator to learn process-specific duties and tasks. After operators demonstrate the knowledge to perform the duties and tasks in a safe manner on their own, they can work independently. In addition, all operators periodically receive refresher training on the operating procedures to ensure that their skills and knowledge are maintained at an acceptable level. This refresher training is conducted at least every 3 years. All training is documented for each operator, including the means used to verify the operators understanding of the training.

#### Contractors

The San Juan River gas plant uses contractors to supplement its work force during periods of increased maintenance or construction activities. Because some contractors work on or near process equipment, the gas plant has procedures in place to ensure that contractors 1) perform their work in a safe manner, 2) have the appropriate knowledge and skills, 3) are aware of the hazards in their workplace, 4) understand what they should do in the event of an emergency, 5) understand and follow site safety rules, and 6) inform gas plant personnel of any hazards that they find during their work. This is accomplished by providing contractors with 1) process overview, 2) information about safety and health hazards, 3) emergency response plan requirements, 4) safe work practices prior to their beginning work, 5) safe and hot work permits as required. In addition the San Juan River gas plant evaluates contractor safety programs and performance during the selection of a contractor.

#### Pre-startup Safety Reviews (PSSRs)

The San Juan River gas plant conducts a PSSR for any new facility or facility modification that requires a change in the process safety information. The purpose of the PSSR is to ensure that safety features, procedures, personnel and equipment are appropriately prepared for startup prior to placing the equipment into service. This review provides one additional check to make sure construction is in accordance with the design specifications and that all supporting systems are operationally ready. The PSSR review team uses checklists to verify all aspects of readiness. A PSSR involves field verification of the construction and serves as a quality assurance mechanism verifying that accident prevention program requirements are properly implemented.

#### Mechanical Integrity

The San Juan River gas plant has well established practices and procedures to maintain pressure vessels, piping systems, relief and vent systems, controls, pumps, heat exchangers, compressors and emergency shutdown systems in a safe operating condition. The basic aspects of this program include: 1) conducting training, 2) developing written procedures, 3) performing inspections and tests, 4) correcting identified deficiencies, and 5) applying quality assurance measures. In combination these activities form a system that maintains the mechanical integrity of the process. All of these activities are tracked and documented using Avantis, an asset manager database.

Maintenance personnel receive training on 1) an overview of the process, 2) safety and health hazards, 3) applicable maintenance procedures, 4) emergency response plans, and 5) applicable safe work practices to help ensure that they can perform their jobs in a safe manner. Written procedures help ensure that work is performed in a consistent manner and provide a basis for training. Inspections and tests are performed to verify that equipment parameters are within acceptable limits. For a vessel, the parameter being monitored would typically be wall thickness. If a deficiency is identified, employees will correct the deficiency before placing the equipment back into service (if possible) or a management of change team will review the use of the equipment and determine what actions are necessary to ensure the safe operation of the equipment.

#### Safe Work Practices

The San Juan River gas plant has long standing safe work practices in place to help ensure worker and process safety. Examples of these include 1) control of the entry/presence/exit of support personnel, 2) a lockout/tagout procedure to ensure isolation of energy sources for equipment undergoing maintenance, 3) a procedure for safe removal of hazardous substances before process piping or equipment is opened, 4) a permit and procedure to control spark producing activities (i.e. hot work), and 5) a permit and procedure to ensure that adequate precautions are in place before entry into a confined space. These procedures along with training of affected personnel form a system to help ensure that operations and maintenance activities are performed safely.

#### Management of Change

The San Juan River gas plant has a comprehensive system to manage changes to all covered processes. This system requires that changes to items such as process equipment, chemicals, technology, procedures and other facility changes be properly reviewed and authorized before being implemented. Changes are reviewed to 1) ensure that adequate controls are in place to manage any new hazards, 2) verify that existing controls have not been compromised by the change, and 3) ensure that changes do not introduce an unknown hazard to the process. Affected chemical hazard information, process operating limits and equipment information, as well as procedures are updated to incorporate these changes. In addition, operating and maintenance personnel are provided necessary training on the change.

#### Incident Investigation

The San Juan River gas plant promptly investigates all incidents that resulted in, or reasonably could have resulted in a fire/explosion, major property damage, environmental loss or personal injury. The goal of each investigation is to determine the facts and develop corrective actions to prevent a recurrence of the incident or a similar incident. The investigation team documents its findings, develops recommendations to prevent a recurrence and forwards these results to gas plant management for resolution. The final resolution of each finding or recommendation is documented and the investigation results reviewed with all employees who could be affected by the findings. Incident investigation reports are retained for at least 5 years so that the reports can be reviewed during future PHAs.

#### Compliance Audits

To guarantee that the accident prevention program is functioning properly, the San Juan River gas plant audits to determine that the procedures and practices required by the accident prevention program are being implemented. Compliance audits are conducted at least every 3 years. Both hourly and staff personnel participate as audit team members. The audit team develops findings that are forwarded to gas plant management for resolution.

#### Chemical-Specific Prevention Steps

The processes at the San Juan River gas plant have hazards that must be managed to ensure continued safe operation. The following is a description of existing safety features applicable to prevention of accidental releases of regulated substances in the facility.

#### Universal Prevention Activities

The accident prevention program summarized previously is applied to all RMP covered processes at the San

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Juan River gas plant. Collectively these prevention program activities help prevent potential accident scenarios that could be caused by equipment failure and human errors.

#### Specialized Safety Features

The San Juan River gas plant has safety features on many units to help 1) contain/control a release, 2) quickly detect a release, and 3) reduce the consequence of a release. The following types of safety features are used in the covered processes:

- Release Detection- Hydrocarbon and hydrogen sulfide detectors with alarms
- Release Containment/Control- Process relief valves that discharge to a flare which will capture and incinerate episodic releases
  - Valves to permit isolation of portions of, or the entire process
  - Automated shutdown systems for specific process parameters
  - Curbing or diking to contain liquid releases
  - Redundant equipment and instrumentation (e.g. UPS system)
  - Atmospheric relief devices
    - Overall Plant and local area ESDs
- Release Mitigation- Manually operated fire extinguishing systems
  - Trained emergency response personnel
  - Personnel protective equipment (e.g. self contained breathing equipment)

#### Five Year Accident History

In the last five years there have not been any hydrocarbon releases whose quantities approached those described in the RMP release events.

#### Emergency Response Program Information

The San Juan River gas plant maintains a written emergency response program, which is in place to protect worker and public safety and the environment. The program consists of procedure for responding to a release of a regulated substance, including the possibility of a fire or explosion if a flammable substance is accidentally released. The procedures address all aspects of emergency response, including proper first aid and medical treatment for exposures, evacuation plans and accounting for personnel after an evacuation, notification of local emergency response agencies and the public if a release occurs, and post incident cleanup. In addition the plant has procedures that address maintenance, inspection and testing of emergency equipment. Employees receive training in these procedures as necessary to perform their specific emergency response duties. The emergency response program is updated when necessary based on modifications made to the plant. The emergency response program changes are administered through the MOC process, which includes informing and/or training affected personnel in the changes.

The overall emergency response program of the San Juan River gas plant is coordinated with the San Juan County and Kirtland Fire Departments and local emergency planning committee (LEPC). This coordination includes periodic meeting of the committee, which includes local emergency response officials, local government officials and industry representatives. The San Juan River gas plant has around the clock communications capability with appropriate LEPC officials and emergency response organizations. This provides a means of notifying the public of an incident, if necessary, as well as facilitating quick response to emergency situations. The San Juan River gas plant conducts periodic emergency drills that involve the local emergency response organizations and the gas plant provides annual refresher training to local emergency responder regarding the hazards of regulated substances in the gas plant.

#### Planned Changes to Improve Safety

The San Juan River plant has annual training on the emergency response plan. This training has included the local emergency response groups including, local ambulance services and the local fire departments. These training sessions are audited by WGR Safety Personnel

## RMP Validation Errors/Warnings --- No Data To Report

# **Risk Management Plan (2004 update)**

## **Executive Summary for the San Juan River Gas Processing Facility**

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To complement the written process operating procedures, the San Juan River gas plant has a comprehensive training program for all employees involved in operating a process. New employees receive basic training in gas plant operations if they are not already familiar with such operations. After successfully completing this training, a new operator is paired with a senior operator to learn process-specific duties and tasks. After operators demonstrate the knowledge to perform the duties and tasks in a safe manner on their own, they can work independently. In addition, all operators periodically receive refresher training on the operating procedures to ensure that their skills and knowledge are maintained at an acceptable level. This refresher training is conducted at least every 3 years. All training is documented for each operator, including the means used to verify the operators understanding of the training.

#### Contractors

The San Juan River gas plant uses contractors to supplement its work force during periods of increased maintenance or construction activities. Because some contractors work on or near process equipment, the gas plant has procedures in place to ensure that contractors 1) perform their work in a safe manner, 2) have the appropriate knowledge and skills, 3) are aware of the hazards in their workplace, 4) understand what they should do in the event of an emergency, 5) understand and follow site safety rules, and 6) inform gas plant personnel of any hazards that they find during their work. This is accomplished by providing contractors with 1) process overview, 2) information about safety and health hazards, 3) emergency response plan requirements, 4) safe work practices prior to their beginning work, 5) safe and hot work permits as required. In addition the San Juan River gas plant evaluates contractor safety programs and performance during the selection of a contractor.

#### Pre-startup Safety Reviews (PSSRs)

The San Juan River gas plant conducts a PSSR for any new facility or facility modification that requires a change in the process safety information. The purpose of the PSSR is to ensure that safety features, procedures, personnel and equipment are appropriately prepared for startup prior to placing the equipment into service. This review provides one additional check to make sure construction is in accordance with the design specifications and that all supporting systems are

operationally ready. The PSSR review team uses checklists to verify all aspects of readiness. A PSSR involves field verification of the construction and serves as a quality assurance mechanism verifying that accident prevention program requirements are properly implemented.

#### Mechanical Integrity

The San Juan River gas plant has well established practices and procedures to maintain pressure vessels, piping systems, relief and vent systems, controls, pumps, heat exchangers, compressors and emergency shutdown systems in a safe operating condition. The basic aspects of this program include: 1) conducting training, 2) developing written procedures, 3) performing inspections and tests, 4) correcting identified deficiencies, and 5) applying quality assurance measures. In combination these activities form a system that maintains the mechanical integrity of the process. All of these activities are tracked and documented using Avantis, an asset manager database.

Maintenance personnel receive training on 1) an overview of the process, 2) safety and health hazards, 3) applicable maintenance procedures, 4) emergency response plans, and 5) applicable safe work practices to help ensure that they can perform their jobs in a safe manner. Written procedures help ensure that work is performed in a consistent manner and provide a basis for training. Inspections and tests are performed to verify that equipment parameters are within acceptable limits. For a vessel, the parameter being monitored would typically be wall thickness. If a deficiency is identified, employees will correct the deficiency before placing the equipment back into service (if possible) or a management of change team will review the use of the equipment and determine what actions are necessary to ensure the safe operation of the equipment.

#### Safe Work Practices

The San Juan River gas plant has long standing safe work practices in place to help ensure worker and process safety. Examples of these include 1) control of the entry/presence/exit of support personnel, 2) a lockout/tagout procedure to ensure isolation of energy sources for equipment undergoing maintenance, 3) a procedure for safe removal of hazardous substances before process piping or equipment is opened, 4) a permit and procedure to control spark producing activities (i.e. hot work), and 5) a permit and procedure to ensure that adequate precautions are in place before entry into a confined space. These procedures along with training of affected personnel form a system to help ensure that operations and maintenance activities are performed safely.

#### Management of Change

The San Juan River gas plant has a comprehensive system to manage changes to all covered processes. This system requires that changes to items such as process equipment, chemicals, technology, procedures and other facility changes be properly reviewed and authorized before being implemented. Changes are reviewed to 1) ensure that adequate controls are in place to manage any new hazards, 2) verify that existing controls have not been compromised by the change, and 3) ensure that changes do not introduce an unknown hazard to the process. Affected chemical hazard information, process operating limits and equipment information, as well as

procedures are updated to incorporate these changes. In addition, operating and maintenance personnel are provided necessary training on the change.

#### Incident Investigation

The San Juan River gas plant promptly investigates all incidents that resulted in, or reasonably could have resulted in a fire/explosion, major property damage, environmental loss or personal injury. The goal of each investigation is to determine the facts and develop corrective actions to prevent a recurrence of the incident or a similar incident. The investigation team documents its findings, develops recommendations to prevent a recurrence and forwards these results to gas plant management for resolution. The final resolution of each finding or recommendation is documented and the investigation results reviewed with all employees who could be affected by the findings. Incident investigation reports are retained for at least 5 years so that the reports can be reviewed during future PHAs.

#### Compliance Audits

To guarantee that the accident prevention program is functioning properly, the San Juan River gas plant audits to determine that the procedures and practices required by the accident prevention program are being implemented. Compliance audits are conducted at least every 3 years. Both hourly and staff personnel participate as audit team members. The audit team develops findings that are forwarded to gas plant management for resolution.

#### Chemical -Specific Prevention Steps

The processes at the San Juan River gas plant have hazards that must be managed to ensure continued safe operation. The following is a description of existing safety features applicable to prevention of accidental releases of regulated substances in the facility.

#### Universal Prevention Activities

The accident prevention program summarized previously is applied to all RMP covered processes at the San Juan River gas plant. Collectively these prevention program activities help prevent potential accident scenarios that could be caused by equipment failure and human errors.

#### Specialized Safety Features

The San Juan River gas plant has safety features on many units to help 1) contain/control a release, 2) quickly detect a release, and 3) reduce the consequence of a release. The following types of safety features are used in the covered processes:

*Release Detection-* Hydrocarbon and hydrogen sulfide detectors with alarms

*Release Containment/Control-* Process relief valves that discharge to a flare which will capture and incinerate episodic releases

- Valves to permit isolation of portions of, or the entire process
- Automated shutdown systems for specific process parameters
- Curbing or diking to contain liquid releases
- Redundant equipment and instrumentation (e.g. UPS system)
- Atmospheric relief devices
- Overall Plant and local area ESDs

*Release Mitigation-* Manually operated fire extinguishing systems

- Trained emergency response personnel
- Personnel protective equipment (e.g. self contained breathing equipment)

#### **Five Year Accident History**

In the last five years there have not been any hydrocarbon releases whose quantities approached those described in the RMP release events.

#### **Emergency Response Program Information**

The San Juan River gas plant maintains a written emergency response program, which is in place to protect worker and public safety and the environment. The program consists of procedure for responding to a release of a regulated substance, including the possibility of a fire or explosion if a flammable substance is accidentally released. The procedures address all aspects of emergency response, including proper first aid and medical treatment for exposures, evacuation plans and accounting for personnel after an evacuation, notification of local emergency response agencies and the public if a release occurs, and post incident cleanup. In addition the plant has procedures that address maintenance, inspection and testing of emergency equipment. Employees receive training in these procedures as necessary to perform their specific emergency response duties. The emergency response program is updated when necessary based on modifications made to the plant. The emergency response program changes are administered through the MOC process, which includes informing and/or training affected personnel in the changes.

The overall emergency response program of the San Juan River gas plant is coordinated with the San Juan County and Kirtland Fire Departments and local emergency planning committee (LEPC). This coordination includes periodic meeting of the committee, which includes local emergency response officials, local government officials and industry representatives. The San Juan River gas plant has around the clock communications capability with appropriate LEPC officials and emergency response organizations. This provides a means of notifying the public of an incident, if necessary, as well as facilitating quick response to emergency situations. The San Juan River gas plant conducts periodic emergency drills that involve the local emergency response organizations and the gas plant provides annual refresher training to local emergency responder regarding the hazards of regulated substances in the gas plant.

#### **Planned Changes to Improve Safety**

The San Juan River plant has annual training on the emergency response plan. This training has included the local emergency response groups including, local ambulance services and the local fire departments. These training sessions are audited by WGR Safety Personnel.

Results of Consequence Analysis

CHEMICAL NAME	CAS #	WEIGHT (lbs)
Butane	106-97-8	70284
Ethane	74-84-0	11322
Isobutane [Propane, 2-methyl]	75-28-5	17266
Isopentane [Butane, 2-methyl-]	78-78-4	48542
Methane	74-82-8	3462
Pentane	109-66-0	332415
Propane	74-98-6	33303

Category: Flammable

Scenario: Worst-case

Release Type: Vapor Cloud Explosion

**Estimated** Distance to 1 psi overpressure: .6 miles (1.0 kilometers)

**Terry Clark**

---

**From:** Heather Yager  
**Sent:** Tuesday, May 18, 2004 1:24 PM  
**To:** Terry Clark  
**Subject:** RE: Risk Management plan info

Terry,

Here are your lat-longs. All have been GPS'd and will be in Datum 1983.

Benedum (31.3375, -101.7652778)  
Midkiff (31.64611111, -101.7697221)  
Chaney Dell (36.433333, -98.233333)  
Chester (36.433333, -98.966666)  
Hiligh/Reno Junction (43.8413889, -105.3622222)  
Newcastle (43.63805556, -104.5566666)  
Kitty (44.31638889, -105.6777777)  
~~Sand Dunes (43.08555556, -106.9002777)~~  
Granger (41.5398, -109.9556)  
Red Desert (41.6424, -108.2580)  
Lincoln Road (41.4765, -109.4727)  
San Juan (36.7575, -108.3679)

-----Original Message-----

**From:** Terry Clark  
**Sent:** Tuesday, May 18, 2004 11:52 AM  
**To:** Heather Yager  
**Subject:** Risk Management plan Info

It is time for us to update our RMP. They ask some mapping questions that I need your assistance with.

For example, if we put in a Lat/Long based on a map, what is the source map scale number? If we use a GPS, or even if we didn't, what is the "Horizontal accuracy" and finally, what is the Horizontal Reference Datum Code? Is it 1927, 1983 or 1984?

I need this information for the following locations pretty soon. If this doesn't make any sense to you, please call me as I the hard copy request and perhaps we can make some sense out of it.

Benedum, Midkiff; Chaney Dell, Chester, Hiligh/Reno Junction, Newcastle, Kitty, Sand Dunes, Granger, Red Desert, Lincoln Road, & San Juan River

## Terry Clark

---

**From:** Kent McEvers  
**Sent:** Tuesday, May 18, 2004 11:47 AM  
**To:** Terry Clark  
**Subject:** RE: Updates on Risk Management Plans

1. Kent McEvers, Area Manager, home.....505-326-4054.....cell..505-860-7208
2. 19 full time and 2 temps.
3. Last inspection unknown. By a safety org. NMOCD did an overall inspection two years ago....count?....Last time would have been internal audit by yous guys.
4. Not sure about this one either. I thought Bob and Don Meadows went thru this. Not sure if Rick has looked at it.
5. We have went through items over the years as required. I cannot say when we have sat down over a period of time and went through this with everyone....we need to.
6. We were always going to sit down with the local fire dept. and never have. Bob has been faithful on the LEPC but not sure if he has shared this with them. I know we have talked about it.

-----Original Message-----

**From:** Terry Clark  
**Sent:** Tuesday, May 18, 2004 11:41 AM  
**To:** Bryant Hazard; Dave Hatfield; Arnie Krush; Bobby Schmitz; Kent McEvers  
**Cc:** Rick Morrish; Don Meadows; Pete Bryant; Rex Specht; Bruce Portz  
**Subject:** Updates on Risk Management Plans

I need some help gathering information on the following plants. While I know some of this, I would prefer having it verified by you or your folks. The due date on this renew is June 21 and obviously, we need to have the information much sooner than that, hopefully by the 2nd or 3rd of June.

The information I need is on the following plants:

Benedum  
Midkiff

Chaney Dell  
Chester

Sand Dunes  
Hillight/Reno Junction  
Kitty  
Newcastle

Lincoln Road  
Red Desert  
Granger

San Juan

Specifically the information I need is:

1. Who is the emergency contact for this facility?  
Name:  
Title:  
Phone number:  
24 hr phone number:
2. The number of full time employees who are attached to the facility. Not the number there on a day to day basis.
3. When was the last outside agency safety inspection?  
who did it? DOT/OSHA/EPA/PSC or someone else
4. When was the Emergency Response plan last updated?
5. When were the employees last trained on the Emergency Response plan?
6. What outside emergency response agency has knowledge about the facilities emergency response plan? Fire department, LEPC or someone else?

**APPENDIX E – EMERGENCY RESPONSE PLAN**

**ANADARKO PETROLEUM CORPORATION  
SOUTHERN REGION EMERGENCY RESPONSE /  
OIL SPILL CONTINGENCY PLAN**

<b>INTRODUCTION</b>	<b>1</b>
<b>INCIDENT LEVELS</b>	<b>2</b>
<b>Injury</b>	<b>3</b>
<b>SPILLS</b>	<b>4</b>
<b>NATURAL GAS RELEASE / H2S</b>	<b>5</b>
<b>HAZWOPER</b>	<b>6</b>
<b>COMMUNICATION, EVIDENCE &amp; MEDIA</b>	<b>7</b>
<b>INCIDENT COMMAND SYSTEM (ICS)</b>	<b>8</b>
<b>ICS CONTACT INFORMATION</b>	<b>9</b>
<b>FEDERAL AND STATE AGENCIES</b>	<b>A</b>

**AREA SPECIFIC CONTACT INFORMATION**

<b>Kansas</b>	<b>Elkhart/Hougatton</b>
---------------	--------------------------

<b>New Mexico</b>	<b>SJ Basin</b>
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<b>Texas</b>	<b>Midland</b>
	<b>Mitchell Puckett/Gomez</b>

<b>Texas</b>	<b>Ozona</b>
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<b>Texas</b>	<b>McAllen</b>
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<b>Texas</b>	<b>Maverick Basin</b>
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<b>Texas</b>	<b>Central Chalk</b>
--------------	----------------------

<b>Texas</b>	<b>Woodville</b>
	<b>North Star and Tyler County</b>

<b>Texas</b>	<b>Bossier/Freestone</b>
	<b>Pinnacle/Bethel Plant/Dew</b>

<b>Texas</b>	<b>Carthage and N. Louisiana</b>
	<b>Sarepta</b>



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 1
	Section: Introduction
	Revision: 7/1/2007

## 1.0 PURPOSE & SCOPE

This Emergency Response / Oil Spill Contingency Plan (the "Plan") is designed to help Anadarko Petroleum Corporation ("Anadarko") and its subsidiaries respond quickly and effectively to the problems presented by serious incidents when they do occur. The Plan's primary goal is to help the company mitigate or prevent as far as practical, any injury or loss of life, damage to property, wildlife, or the ecology.

Situations resulting from spills and releases can generate complex technical, legal and public relations problems. It cannot be overemphasized that the best way to handle emergency situations is to prevent their occurrence.

Within this Plan you will find descriptions of the duties that must be accomplished when a serious incident occurs. It provides personnel with procedures for handling such incidents effectively.

### **This Emergency Response / Oil Spill Contingency Plan is designed:**

- |  |
|--|
| <ul style="list-style-type: none"><li>• To serve as the basis for an organized action plan in dealing with emergencies and spills of all magnitudes.</li><li>• To spell out responsibility, priority and importance in countering an emergency situation or major spill.</li><li>• To provide information on the means of handling serious incidents and identify the organizations, which are involved.</li><li>• To tabulate the personnel and agencies that must be notified.</li></ul> |
|--|

**Prompt action** is mandatory. For this reason, the content of this Plan must be understood by involved Anadarko personnel. All employees involved in responding to an incident should be informed to take quick action to protect life and property and to immediately report the incident.

Although this Plan contains procedures applicable to most foreseeable incidents, actual conditions will dictate whether deviations from the Plan are appropriate.

Facility Name: San Juan River Gas Plant  
EPA ID: 1000 0013 0093

---

c. Federal wilderness areas: No

d. Other (Specify):

**5.10 Passive mitigation considered:**

a. Dikes: No

b. Fire walls: No

c. Blast walls: No

d. Enclosures: No

e. Other (Specify):

**5.11 Active mitigation considered:**

a. Sprinkler system: No

b. Deluge systems: No

c. Water curtain: No

d. Excess flow valve: Yes

e. Other (Specify):

**5.12 Graphic file name:**

## Section 6. Accident History --- No Data To Report

## Section 7. Prevention Program 3

**Process ID:** 7 NGL Storage

**Prevention Program ID:** 3

**Prevention Program Description:** This is a cryogenic plant designed to recover liquids from field grade natural gas. The plant is also designed to remove small amounts of Hydrogen Sulfide from the inlet stream and convert it to elemental sulfur. The plant is not designed to fractionate the liquids. The liquids are pumped from the plant through a pipeline. If the pumps are out of service, it is possible to store some liquids and haul them out in pressurized tanker trucks. It is due to the capability to store these liquids and the liquids off the stabilizer that the plant meets the Program level 3 requirements. These tanks are protected by relief valves which are properly sized to prevent vessel failure. Additionally, the liquid levels are routinely checked to prevent overfilling these tanks. This facility is manned 24/7 by trained operators.

**7.1 NAICS Code** 211112

**7.2 Chemicals** Chemical Name  
Flammable Mixture

**7.3 Date on which the safety information was last reviewed or revised:** 02/10/2003

**7.4 Process Hazard Analysis (PHA):**

a. Date of last PHA or PHA update: 02/10/2003

b. The technique used:



<b>Southern Region</b>	
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## 1.1 AREAS OF COVERAGE

The manual covers the following areas:

Exploration & Production	
•	Texas
•	Kansas
•	Louisiana
•	Oklahoma
Midstream	
•	Texas
•	Utah (Greater Natural Buttes Area)
•	Colorado
•	New Mexico
•	Kansas
•	Arizona
•	Oklahoma
•	Mississippi

## 1.2 PLAN REVIEW

The plan will require modification from time to time, as personnel change, as technologies advance, and as experience indicates improvements. The plan is to be reviewed semiannually by the EHS staff to assure that it is up to date.

•	Organizational Changes
•	Procedure Modifications
•	Change in Commodities Transported
•	Regulatory Mandates
•	Pipeline Acquisitions or Modification
•	Leaks / Spills



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	1
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### 1.3 DRILLS

Periodic drills, either tabletop or actual on-site, should be conducted. The drills will improve the emergency response plan through critiques and practice, as well as provide public relations benefits. The impact on a community from an incident can be greatly reduced by having good communication between the company and all of the stakeholders (neighbors, emergency response personnel and local officials, for example).

Following any drill or emergency incident, Anadarko employees and incident command personnel should conduct a critique to determine how the response went, how this manual was used and followed, and if any improvements could be made.

**The following questions should be answered following any drill or critique:**

- |   |   |
|---|---|
| • | Was the emergency response plan implemented in a timely and efficient manner?                         |
| • | Were evacuation alarms activated, escape routes followed and all personnel accounted for?             |
| • | Were the proper authorities and agencies notified in a timely manner?                                 |
| • | Were the proper procedures and checklists followed and were they effective in resolving the incident? |
| • | Was the correct personal protective equipment available and used?                                     |
| • | How could this emergency response plan be changed to increase effectiveness?                          |

All drills should be documented and prepared in a format suggested by the National Preparedness for Response Exercise Program (PREP).



<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 1
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## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	2
Section:	Incident Levels
Revision:	7/1/2007

## 2.0 INCIDENT LEVELS

In order to properly respond to any emergency, incidents should be classified into one of three levels. The incident level is determined by the complexity of the incident, the risks to company personnel and the public, and the impact on the environment. These level classifications will be used to communicate to all personnel within the company.

### 2.1 LEVEL 1 (Lowest Level)

Level 1 is an incident which can be effectively managed within the Region without activating the Emergency Response Team. Notification to department Manager/Director is determined by the nature of the incident.

•	An incident without recordable injuries, public involvement or adverse media involvement.
•	Oil spills to water equal to or less than one (1) barrel.
•	An incidental release of a substance which can be absorbed, neutralized, or otherwise controlled at the time of a release by employees in the immediate area and that does not pose a potential safety or health hazard or threat to the environment and is not immediately reportable to any government agency.
•	Fires immediately controlled and extinguished.



## Southern Region

Emergency Response /  
Oil Spill Contingency Plan

Section No.:	2
Section:	Incident Levels
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### 2.2 LEVEL 2 (Intermediate Level)

Level 2 is an incident which requires notification to the Operations Manager. Corporate notification is determined by the nature of the incident. Activate Emergency Response Teams as appropriate.

•	Incidents involving recordable or serious injury to employees, dependents, contractors, or the public as a result of Company activities.
•	Any other incident or situation which may create a serious risk to life, property, or the environment.
•	Oil spills to water greater than one (1) barrel, releases, explosions, or other incidents that are required to be <b>immediately</b> reported to any government agency.
•	Fires not immediately controlled and extinguished.
•	Incidents that may expose Anadarko to significant liability whether employees are involved or not (e.g. vehicle accident).
•	Incidents that affect others which are a concern for the Company (e.g. facility incidents involving other operators).
•	Natural Disasters or severe weather events.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	2
Section:	Incident Levels
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### 2.3 LEVEL 3 (Highest Level)

A Level 3 incident requires notification to all levels of region management. Notification process to corporate groups should follow chain of command. Emergency Response Teams may be activated depending on nature of the incident.

•	Death or injury to any person which has a substantial risk of permanent disability or impairment.
•	Spills, releases or other incidents that impact environmentally sensitive areas, cause closure or rerouting of public roads or affect the public health.
•	Blowouts.
•	Fires not immediately controlled and extinguished with injury or significant property damage.
•	Any event that affects the public, or is likely to attract adverse media coverage.
•	Incidents that could significantly impact Anadarko cash flow and/or financial performance.



**Southern Region**

Emergency Response /  
Oil Spill Contingency Plan

Section No.:	2
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<b>Southern Region</b>	
Emergency Response / Oil Spill Contingency Plan	Section No.: 3
	Section: Injury
	Revision: 7/1/2007

The first aid and emergency procedures detailed below could be life saving. Become familiar with the information described below, so that disasters can be rapidly contained. It is the responsibility of the injured personnel to report bodily injury, chemical exposure(s) or property damage. Use latex gloves (or some equivalent if you have a latex allergy) before giving first aid. **Always** wash your hands before (if possible) and after giving first aid to avoid the risk of infection and transmission of disease.

### 3.0 NOTIFICATION INSTRUCTIONS

<b>First Responder</b>	The employee at the scene who is most qualified to do so will render first aid or assistance and assign personnel to call emergency services and notify the Foreman / Superintendent.						
<b>Foreman / Superintendent</b>	The Foreman / Superintendent will obtain details of the incident, assure that emergency services have been called, notify the Area Manager / Next Level Supervisor and Safety Analyst and direct further on-site activities.						
<b>Area Manager / Next Level Supervisor</b>	The Area Manager / Next Level Supervisor will notify the Region Manager and Incident Commander.						
<b>Safety Analyst</b>	The Safety Analyst will: <table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"><b>A</b></td> <td>Notify appropriate regulatory agencies and EHS Manager.</td> </tr> <tr> <td style="text-align: center;"><b>B</b></td> <td>Complete the appropriate incident reports.</td> </tr> <tr> <td style="text-align: center;"><b>C</b></td> <td>Conduct necessary incident investigation.</td> </tr> </table>	<b>A</b>	Notify appropriate regulatory agencies and EHS Manager.	<b>B</b>	Complete the appropriate incident reports.	<b>C</b>	Conduct necessary incident investigation.
<b>A</b>	Notify appropriate regulatory agencies and EHS Manager.						
<b>B</b>	Complete the appropriate incident reports.						
<b>C</b>	Conduct necessary incident investigation.						
<b>Incident Commander or designee</b>	The Incident Commander or designee will notify the appropriate personnel and will determine if the Emergency Response Room is to be activated and what Emergency Response Team (ERT) members should be notified.						
<b>NOTE</b>	All injuries / illnesses should be reported to the Safety Analyst immediately.						



## Southern Region

Emergency Response /  
Oil Spill Contingency Plan

Section No.: 3  
Section: Injury  
Revision: 7/1/2007

### 3.1 NOTIFICATION GUIDELINES

Notification to each level should include the following:

A	Date & time of incident
B	Location of incident (with directions to the site)
C	Description of incident and nature of injuries
D	Location where injured employee was moved
E	Identity of emergency services present at the site
F	Other considerations (e.g., media attention, regulatory agencies at site, etc.)

### 3.2 ANADARKO 24-HOUR REPORTING SYSTEM

Several offices have an after-hour answering service available in the event of an emergency situation. The answering service will page the person listed on their on-call list. This reporting system will ensure that the appropriate resources are available & utilized.


**NOTE:** IF ANY INJURY / ILLNESS FALLS UNDER THE "REPORT IMMEDIATELY" GUIDELINES, IT IS UNACCEPTABLE TO LEAVE A MESSAGE ONLY – ALWAYS CONTINUE TO CALL THROUGH THE CHAIN OF COMMAND UNTIL A PERSON IS REACHED.



## Southern Region

Emergency Response /  
Oil Spill Contingency Plan

Section No.: 3

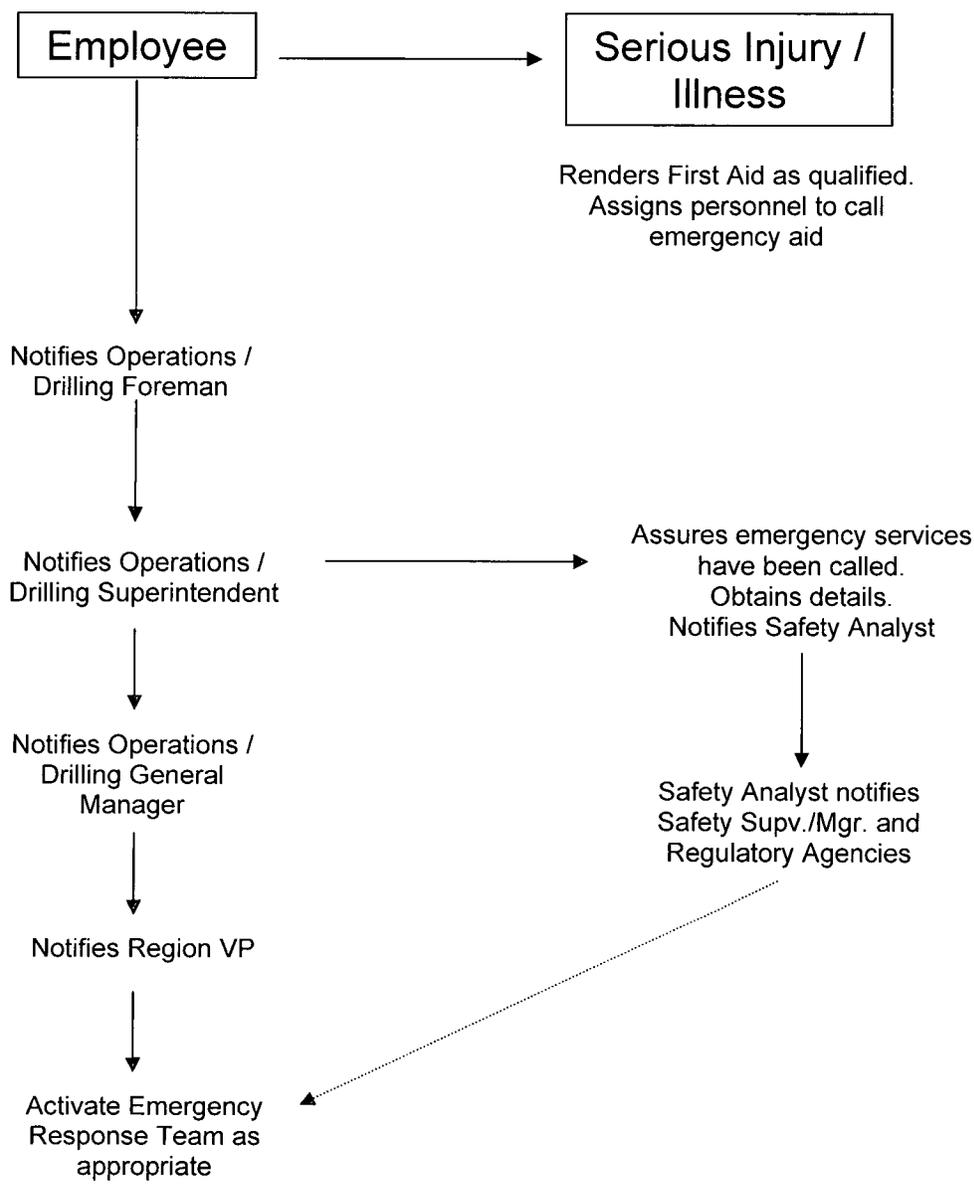
Section: Injury

Revision: 7/1/2007

### 3.3 INJURY LEVELS

Very Serious Injury	Patient is unconscious and/or shock and/or bleeding seriously. <b>Call 911</b>
Serious Injury	Patient is in need of skilled medical assistance, but is able to walk. Treat on-site as practical and transport to emergency center or call 911.
Minor Injury	Person sustains minor cut, bruise, etc. First aid treatment using first-aid kit.

**Notification Flowchart** **Figure 3-0**





## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	4
Section:	Spills
Revision:	7/1/2007

#### 4.0 SPILL & RELEASE DETECTION

The appropriate Anadarko field personnel are to conduct visual observations and routine inspections of locations and equipment to ensure proper operation of all facilities.

In the event of a spill or release at a facility, prompt response and reporting is required. Failure to immediately report and respond to a spill or release can increase the environmental damage and subject Anadarko to fines and enforcement actions.

Have relevant information available before starting notification. This does not mean a complete report of everything, but as a minimum the following:

- A. Date and time of incident.
- B. Type and estimated total quantity of material released.
- C. Source and cause of the release.
- D. Description of all affected media and assessment of environmental conditions such as precipitation, wind speed and direction, and temperature.
- E. Estimated spill destination and local topography including waterways that could potentially be threatened.
- F. Assessment of immediate danger to human life or health or to the environment, including outside the facility, and extent of damages or injuries, if any.
- G. Actions being used to stop, remove and mitigate the effects of the release.

#### 4.1 INITIAL RESPONSE

##### ENSURE SAFETY OF CITIZENS & RESPONSE PERSONNEL

- Identify hazard(s) of spilled material.
- Establish site control (hot zone, warm zone, cold zone, and security).
- Consider evacuations, as needed.
- Establish transportation restrictions.
- Monitor air in impacted areas.
- Develop site safety and health plan for response personnel.
- Ensure safety briefings are conducted.
- Refer to Material Safety Data Sheets for spilled product elements & procedures.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	4
Section:	Spills
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#### STOP THE LEAK (IF POSSIBLE & SAFE)

- Complete emergency shutdown.
- Initiate temporary repairs.
- Transfer product if possible.

#### NOTIFY ANADARKO CHAIN OF COMMAND

- Refer to the Section 2 for reporting level.
- Notify Incident Commander as needed.
- Incident Commander will assemble Emergency Response Team as needed.

#### SHUT OFF ALL IGNITION SOURCES

- No smoking at or around spill site.
- No open flames or portable lighting.
- No hot work unless approved by Safety Officer.

#### CONTAIN THE SPILL

- Deploy oil containment boom or other containment measures at the spill source and appropriate collection areas.
- Conduct recovery operations.
- Develop disposal plan.

#### NOTIFY SPILL RESPONSE CONTRACTORS

- Notify response company for equipment and manpower as needed.

#### ESTIMATE SPILL VOLUME

- Retrieve detailed information regarding the release (daily production, duration of release, etc.).
- Survey spill site for dimensions of spill.

#### NOTIFY AGENCIES OF SPILL SIZE

- Estimate volume of release.
- Use Agency Notification List to determine required agency notifications.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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#### NOTIFY AGENCIES IF FLUID ENTERS A WATER SOURCE

- Verify release impacted navigable waters.
- Use Agency Notification List to determine required agency notifications.

#### 4.2 FOREMAN / SUPERINTENDENT RESPONSE ACTIONS

The Foreman / Superintendent will:

- A** Mobilize material, equipment, and manpower to stop, contain, and clean up the spill.
- B** Report spill to the Area Manager / Next Level Supervisor and the Environmental Specialist.
- C** Notify appropriate regulatory agencies and EHS Manager/Director
- D** Complete Form 416 and submit to EHS Analyst

#### 4.3 ENVIRONMENTAL SPECIALIST RESPONSE ACTIONS

The Environmental Analyst will:

- A** Notify appropriate regulatory agencies and EHS Manager/Director.
- B** Complete the appropriate incident reports.
- C** Act as Clean-Up Supervisor

#### 4.4 AREA SUPERINTENDENT / NEXT LEVEL SUPERVISOR

If necessary, and based on the magnitude and impacts of the spill, the Area Superintendent will notify the appropriate Operations Manager.

#### 4.5 OPERATIONS MANAGER

The Operations Manager will notify the appropriate Region Vice President and will determine if the Emergency Response Room is to be activated and what Emergency Response Team (ERT) members should be notified.



## Southern Region

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### 4.6 QUALIFIED INDIVIDUAL AND EMERGENCY MANAGEMENT TEAM NOTIFICATIONS

#### Reporting Procedures

Anadarko employees, contractors, and subcontractors are responsible for maintaining a vigilant watch for oil spill discharges of any magnitude from Anadarko facilities and operations. The **APC Form 416 (Report a Release)** and **APC Form 416s (Supplemental Information)** must be completed (example follows).

#### *External Notifications (All spills to water or threatens water)*

Personnel reporting a spill, releases of hazardous substances of any size, or any type of emergency incident at an Anadarko facility will follow the reporting procedures listed below:

EHS personnel are responsible for reporting a spill to water, threatens water or a volume above any regulatory threshold to the following regulatory agencies immediately:

- 1) National Response Center
- 2) EPA (Spills related to NPDES discharge point)
- 3) Appropriate State & Local Regulatory Agencies

#### *Internal Notifications (All spills greater than 1 barrel or any spill to water)*

Personnel reporting a spill of greater than one (1) barrel are responsible for notifying both of the departments listed below:

- 1) EHS Department (verbal and written spill report)
- 2) Appropriate Production, Drilling or Midstream Department

After notification, EHS Department personnel will provide follow-up activities listed below:

- 1) Confirm notification by Field Personnel and complete additional notifications;
- 2) Provide subsequent written notifications required; and
- 3) Conduct an incident investigation and recommend improvements as needed.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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#### 4.7 SPILL RESPONSE AND CLEANUP

Company personnel and contractors are equipped and trained to respond to certain "minor spills". Minor spills can generally be described as those where the quantity of product spilled is small, the material can be easily controlled, the spill is localized, and the product is not likely to seep into groundwater or reach surface water or adjoining shorelines. Procedures for responding to these releases are covered in the facility's SPCC Plan.

Spill response equipment and materials are maintained for each production area. These materials are stored either at the facility or supplied by contractors identified in the Appendixes and are available for use by Company Emergency Response Personnel and Emergency Response Contractors. A list of company owned spill response material is included in the Appendixes.



## Southern Region

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APC 416 (05/07)

Assessment:

- Reportable (Deviation)  
 Non-Reportable (Non-Deviation)



NRC #

APC #

APC 416s completed

## Report a Release

<input type="checkbox"/> Spill <input type="checkbox"/> Excess Emission																																																																				
<b>Exception Creation</b>	Facility _____ Qtr/Qtr _____ Section _____ Township _____ Range _____ API# _____ County _____ State _____ Field _____ Office _____ Describe Source of Release and Migration of Discharge _____																																																																			
<b>Assignment Review Identification Tab</b>	Assignee (goes on their dashboard) _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Discovered</th> <th colspan="2">Approximate Released Date/Time</th> <th colspan="2">Controlled</th> </tr> <tr> <td>Date</td><td>Time</td> <td>Date</td><td>Time</td> <td>Date</td><td>Time</td> </tr> </table> Describe Probable Cause of Release _____ Describe Actions to Control Release _____	Discovered		Approximate Released Date/Time		Controlled		Date	Time	Date	Time	Date	Time																																																							
Discovered		Approximate Released Date/Time		Controlled																																																																
Date	Time	Date	Time	Date	Time																																																															
<b>Exception Details</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Agency Contacted</th> <th>Phone Number</th> <th>Contact</th> <th>Date / Time</th> <th>Reference #</th> <th>Who made call</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> Remarks _____	Agency Contacted	Phone Number	Contact	Date / Time	Reference #	Who made call																																																													
Agency Contacted	Phone Number	Contact	Date / Time	Reference #	Who made call																																																															
<b>Source Pipeline Info</b>	Source _____ From _____ To _____ Diameter _____ in Construction _____ Throughput _____ bbl/day																																																																			
<b>Spill / Excess Emission</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Material Released</th> <th>Qty Released</th> <th>Qty Into Waterway</th> <th>Qty Recovered</th> <th>Amt Flared</th> <th>scf</th> <th>Amt Vented</th> <th>scf</th> </tr> <tr> <td><input type="checkbox"/> Produced Water</td> <td>bbl</td> <td>bbl</td> <td>bbl</td> <td>Supp Gas Amt</td> <td>scf</td> <td>Supp Gas Heat Content</td> <td>BTU/scf</td> </tr> <tr> <td><input type="checkbox"/> Condensate</td> <td>bbl</td> <td>bbl</td> <td>bbl</td> <td colspan="2">Expected to last more than 24 hours</td> <td colspan="2"><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td><input type="checkbox"/> Crude Oil</td> <td>bbl</td> <td>bbl</td> <td>bbl</td> <td colspan="4"> </td> </tr> <tr> <td><input type="checkbox"/> Chemical:</td> <td>bbl</td> <td>bbl</td> <td>bbl</td> <td colspan="4"> </td> </tr> </table>	Material Released	Qty Released	Qty Into Waterway	Qty Recovered	Amt Flared	scf	Amt Vented	scf	<input type="checkbox"/> Produced Water	bbl	bbl	bbl	Supp Gas Amt	scf	Supp Gas Heat Content	BTU/scf	<input type="checkbox"/> Condensate	bbl	bbl	bbl	Expected to last more than 24 hours		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Crude Oil	bbl	bbl	bbl					<input type="checkbox"/> Chemical:	bbl	bbl	bbl																															
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<input type="checkbox"/> Chemical:	bbl	bbl	bbl																																																																	
<b>Drainage</b>	Did release reach a drainage feature? <input type="checkbox"/> Yes <input type="checkbox"/> No      What was the condition of the drainage feature at the time of the release? <input type="checkbox"/> Damp <input type="checkbox"/> Dry      How often does the drainage feature have water flow? <input type="checkbox"/> Flowing <input type="checkbox"/> Frozen <input type="checkbox"/> Continuous <input type="checkbox"/> Standing / Pooling <input type="checkbox"/> Only after rainfall which is _____ times a yr																																																																			
<b>Waterway</b>	Did the release enter or threaten water? <input type="checkbox"/> Threatened water <input type="checkbox"/> Entered water <input type="checkbox"/> No, did not threaten or enter water																																																																			
<b>Time</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Length</th><th>ft</th> <th>Width</th><th>ft</th> <th>Depth</th><th>ft</th> <th>Saturation ratio</th><th>scf</th> <th>Salinity of Soil</th><th>ft</th> <th>Size of Area Impacted</th><th>ft<sup>2</sup></th> </tr> <tr> <td>Any Damages?</td><td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td colspan="2">Evacuation Needed?</td><td colspan="2"><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td colspan="2">Any Injuries?</td><td colspan="3"><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Into a Sensitive Area?</td><td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td colspan="2">Onto Federal Land?</td><td colspan="2"><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td colspan="2">Onto Indian Land?</td><td colspan="3"><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td colspan="11">Describe Damages to Animals or Vegetation _____</td> </tr> <tr> <td colspan="11">Describe Environmental Impact _____</td> </tr> <tr> <td colspan="11">Select Affected Media <input type="checkbox"/> Waterway <input type="checkbox"/> Wetlands <input type="checkbox"/> Groundwater <input type="checkbox"/> Tundra <input type="checkbox"/> Ice / Snow <input type="checkbox"/> Ice Pad / Road <input type="checkbox"/> Air <input type="checkbox"/> Soil <input type="checkbox"/> Gravel <input type="checkbox"/> Lease <input type="checkbox"/> Secondary Containment</td> </tr> </table>	Length	ft	Width	ft	Depth	ft	Saturation ratio	scf	Salinity of Soil	ft	Size of Area Impacted	ft <sup>2</sup>	Any Damages?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Evacuation Needed?		<input type="checkbox"/> Yes <input type="checkbox"/> No		Any Injuries?		<input type="checkbox"/> Yes <input type="checkbox"/> No			Into a Sensitive Area?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Onto Federal Land?		<input type="checkbox"/> Yes <input type="checkbox"/> No		Onto Indian Land?		<input type="checkbox"/> Yes <input type="checkbox"/> No			Describe Damages to Animals or Vegetation _____											Describe Environmental Impact _____											Select Affected Media <input type="checkbox"/> Waterway <input type="checkbox"/> Wetlands <input type="checkbox"/> Groundwater <input type="checkbox"/> Tundra <input type="checkbox"/> Ice / Snow <input type="checkbox"/> Ice Pad / Road <input type="checkbox"/> Air <input type="checkbox"/> Soil <input type="checkbox"/> Gravel <input type="checkbox"/> Lease <input type="checkbox"/> Secondary Containment										
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<b>Corrective Actions</b>	Clean up Date / Time _____ Describe Clean-up Measures (Who / What / How) _____ Start _____ Stop _____																																																																			
<b>Weather</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Temp</td><td>°F</td><td>Ceiling</td><td>ft</td> <td>Visibility</td><td>_____</td> <td>Wind Direction</td><td>_____</td> <td>Wind Velocity</td><td>_____</td> </tr> <tr> <td>Ground Frozen</td><td><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</td> <td>Snow Depth</td><td>ft</td> <td>Water Temp</td><td>°F</td> <td>Seas</td><td>ft</td> <td>Current Speed</td><td>_____</td> <td>Current Dir.</td><td>_____</td> </tr> </table>	Temp	°F	Ceiling	ft	Visibility	_____	Wind Direction	_____	Wind Velocity	_____	Ground Frozen	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Snow Depth	ft	Water Temp	°F	Seas	ft	Current Speed	_____	Current Dir.	_____																																													
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**Southern Region**

**Emergency Response /  
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Section No.: 4  
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APC 416 (05/07)



APC # \_\_\_\_\_

**Report a Release (Supplemental Information)**

Identifiers	Discovered By?				Appearance Percentage:		Barely Visible ____%	Dull ____%
	Discovered How?						Silvery ____%	Dark ____%
Source	Date Prepared? (416)	Report Prepared by? (416)		Nearest Water Elevation				
					Source Elevation			
	Location:	Latitude	Longitude		During Photo		After Photo	
	Source of Spill:							
	End of Source:							
	Draw:							
	Temp Safety Pit:							
	Perm Safety Pit:							
	Nearest Water:							
	Type of Operation	<input type="checkbox"/> Construction <input type="checkbox"/> Production <input type="checkbox"/> Drilling <input type="checkbox"/> Other		Apparent Cause			Apparent Source	
Materials Released	<input type="checkbox"/> Produced Water <input type="checkbox"/> Condensate <input type="checkbox"/> Crude Oil		<input type="checkbox"/> Chemical:		Type of Excess Emission	<input type="checkbox"/> Equipment Malfunction <input type="checkbox"/> Process Upset <input type="checkbox"/> Startup <input type="checkbox"/> Shutdown		
API Gravity					Opacity (Color of Smoke)			
How was Qty Determined?						Opacity %	%	
Waste Generated?	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No					
Waste Characteristic:	<input type="checkbox"/> Hazardous <input type="checkbox"/> Non-Hazardous <input type="checkbox"/> NA		<input type="checkbox"/> Hazardous <input type="checkbox"/> Non-Hazardous <input type="checkbox"/> NA					
Manifest #								
Water	Describe type of water entered							
	Describe the flow path from the end point of the release to the nearest water							
	Describe upstream and downstream waters to which affected water is connected							
	Describe the appearance of the water after release entered the water							
	Describe the appearance of the adjacent soils / shoreline after the release entered the water or drainage feature							
Corrective Action	If Refined Oil or Chemical, can cleanup be accomplished < 24 hours?		<input type="checkbox"/> Yes <input type="checkbox"/> No		Cleanup Estimated Cost	\$		
	Describe preventive measures planned to prevent future spills				Preventive measures estimated cost	\$		
	Describe Oil handling training program							
	Associated Projects (P.A. / Cost Center / AFE#)				Total Cleanup Costs to Date	\$		
				Total Repair Costs	\$			



**Southern Region**

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APC 416a (05/07)

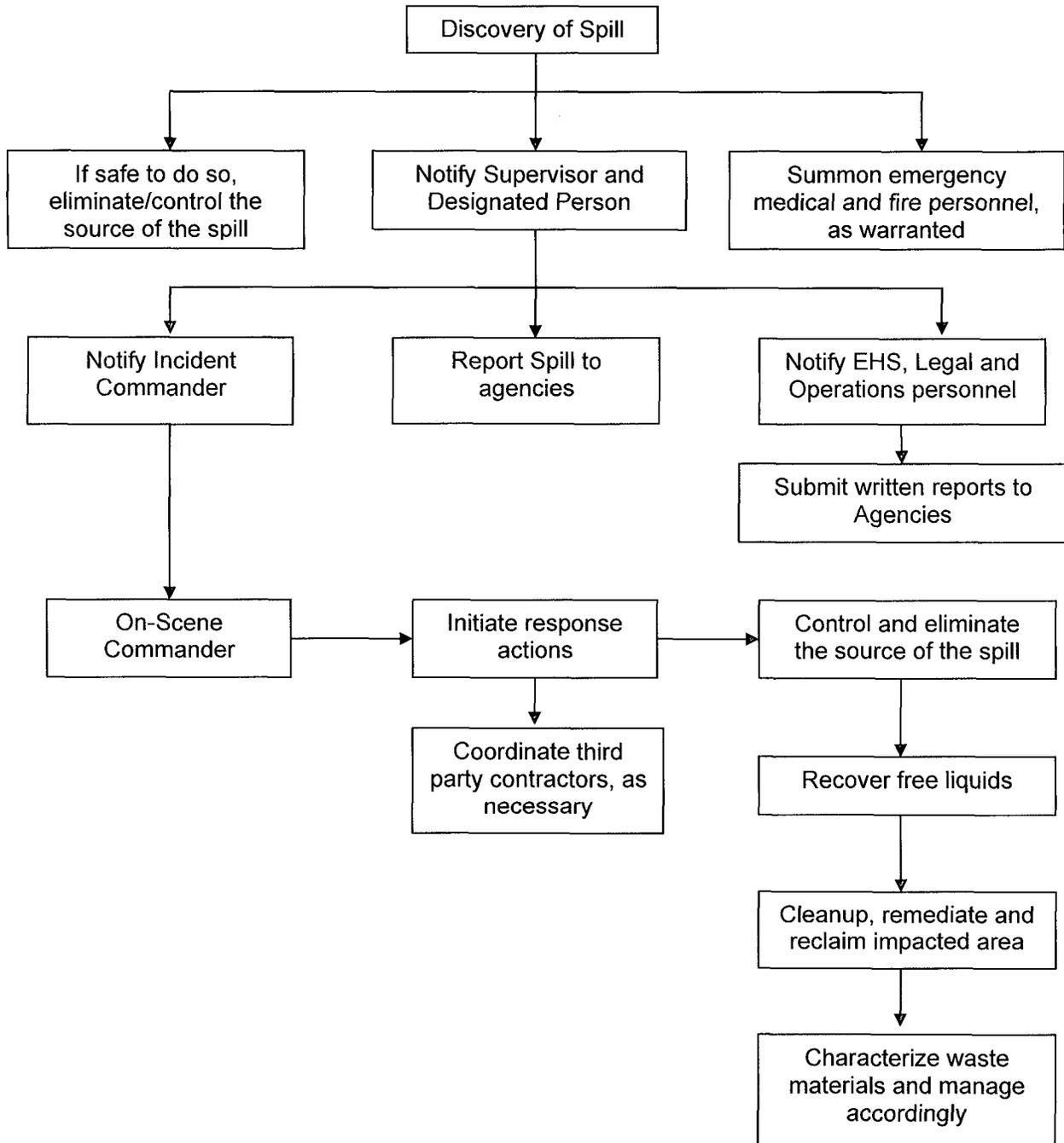


APC # \_\_\_\_\_

**Report a Release (Supplemental Information)**

Vessel Information	Captain		Address of Captain	
			Phone number	
			Card Number	
	Name of Vessel		Call Sign	
Agent Information	Agent		Flag	
	Remarks			
	Material Analyzed (Include locations / time, individual, lab name)			
	Materials Reference Information			
Agency Information	Permit ID, Issuing Agency, Issue Date			
	Agency, Fine Amount, Fine, Date			
	All other individuals that may have information			
	Offshore			
Remediation	Statements <input type="checkbox"/> Yes <input type="checkbox"/> No		Suspected responsible party	
			Phone number	
	All soil containing over 1% TPH was brought to surface for remediation or disposal: <input type="checkbox"/> Yes <input type="checkbox"/> No		If no, explain:	
	All soil containing over 5% TPH has been:		Remediation of soil down to 1% or less TPH will be accomplished by:	
Properly mixed in place to 5% or less by weight TPH <input type="checkbox"/> Yes <input type="checkbox"/> No		Removal from spill site <input type="checkbox"/> Yes <input type="checkbox"/> No		
Removed to an approved disposal site <input type="checkbox"/> Yes <input type="checkbox"/> No		On-site natural bioremediation <input type="checkbox"/> Yes <input type="checkbox"/> No		
Contained in a secure interim storage location <input type="checkbox"/> Yes <input type="checkbox"/> No		On-site enhanced bioremediation <input type="checkbox"/> Yes <input type="checkbox"/> No		
Not Applicable (no soil over 5 percent TPH involved) <input type="checkbox"/> Yes <input type="checkbox"/> No		Other on-site remediation <input type="checkbox"/> Yes <input type="checkbox"/> No		
Estimated date for completion of soil cleanup to 1% by weight TPH:				
Task Details	Agency			
	Agent on Site			
	When?			

**Spill Response Flowchart** Figure 4-0





**Southern Region**

Emergency Response /  
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## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	5
Section:	Natural Gas Release / H <sub>2</sub> S
Revision:	7/1/2007

Every incident of unexpected gas release shall be reported to the next level of supervision immediately. All information regarding the release should be relayed for use during agency reporting. The next level of supervision will then report to local, state and federal agencies as outlined in this plan.

## 5.0 INCIDENT PRIORITIES

The first priority of action for all incidents involving natural gas will be directed toward life & safety first followed by property. Immediate care shall be given to any injured personnel. The surrounding area will be evacuated to reduce risk of additional casualties.

## 5.1 PIPELINE FACILITY INCIDENT

### PIPELINE FACILITY INCIDENT

- Identify the facility and the source of danger.
- Call the fire department.
- Notify the pipeline company.
- Notify chain of command.

## 5.2 BLOWOUT AT PRODUCING WELL

### BLOWOUT AT PRODUCING WELL

- Call the fire department.
- Notify chain of command.
- Identify the source of leakage above or below the master valve.
- Shut off / isolate the auxiliary equipment if possible.
- Wait for further orders from the Incident Commander.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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## 5.3 SAFETY OF CITIZENS / RESPONSE PERSONNEL

### ENSURE SAFETY OF CITIZENS & RESPONSE PERSONNEL

- Evacuate premises (proceed upwind from source).
- Assess situation.
- Eliminate sources of ignition.
- Operate valves to stop flow of gas (if it can be done safely).
- Report release to the next level of supervision.
- Notify police and fire departments if necessary.
- Notify receiving pipeline companies.
- Repair leak location as soon as possible.

## 5.4 SITE SPECIFIC NATURAL GAS RELEASE INFORMATION

Check individual areas plans for natural gas release procedures related to those specific areas. Also see Appendixes for area specific evacuation plans.

## 5.5 H<sub>2</sub>S Contingency Plan

### Scope

The purpose of this Section is to provide an organized plan of action to protect the general public and employees in the event of an accidental release of a potentially hazardous volume of hydrogen sulfide (H<sub>2</sub>S), or other toxic/hazardous gas.

### Responding to Leaks and Containing H<sub>2</sub>S

1. A leak may be detected and/or reported by various individuals (i.e., the public, Anadarko personnel, public safety officials etc.).



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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2. Once a leak has been determined to be from Anadarko's facilities, the following information shall be obtained and relayed to the Superintendent/Designee:
  - a. Type of leak.
  - b. Personal injuries.
  - c. Location and magnitude of leak.
  - d. Direction and velocity of the wind.
  - e. Residents, businesses, and highways located downwind of the leak.
  - f. Your action and/or advice concerning evacuation of nearby residents and businesses and/or establishing roadblocks.
  - g. Action being taken to alleviate the situation.
  - h. Time emergency occurred, or was reported.
  - i. Estimate of damage to date and potential future damage.
3. The Superintendent or designee will be in charge of the actual on-site operations.
4. Superintendent/designee will assign someone to monitor company radio frequency. Carry a 2-way, or bring a company truck with a radio as close as possible and maintain communications with response personnel.
5. The ranking Anadarko employee will be in charge of all actions until the Superintendent or designee arrives. Protective equipment should be used as appropriate.
6. Operating personnel will attempt to determine seriousness of situation, and
  - a. Notify immediately other personnel in area.
  - b. Gather all personnel, customers and visitors at the rendezvous point, depending on release location.
  - c. Recall employees if the emergency happens off-hours. (Numbers listed in Appendixes)
  - d. Contact Houston personnel.
  - e. Maintain a log of all contacts with residents, regulatory and law enforcement agencies, other operators, etc.
  - f. Determine whether assistance is needed from public safety officials.
7. Operating personnel should attempt (from a safe area) to block in leak and be alert for chemical and/or liquid hydrocarbon run-off. If chemicals are involved in a fire, think of the consequences before you use water on the fire. It may be better to contain the fire and let the chemicals incinerate. Close off the area. If you do not have the necessary equipment, heavy equipment operators are listed in the Contractor Services listing in the Appendixes.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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8. If injuries have been sustained, start first aid procedures and call for ambulance service if needed, organize search and rescue if anyone is still unaccounted for.
9. If gas escape cannot be safely shut-in, stopped, etc., and presents hazard to residents, personnel or property, the following steps should be taken:
  - a. Determine if the sour gas being released should be ignited to protect residents.
  - b. Initiate Evacuation Procedure.

### Evacuation Procedure

1. Review with personnel on scene what measures are being taken for evacuation and the urgency for immediate action.
2. Alert necessary personnel to activate all, or a portion of the Sections of this Plan.

#### FACILITY

Superintendent  
Operations Foreman  
Foreman  
Contract Help

#### HOUSTON

Vice President  
Operations Manager  
EHS Analyst

#### Teams for:

Notifying residents and school bus system  
Evacuating Residents  
Establishing and manning roadblocks

#### Persons to:

Man briefing area  
Man safe area  
Monitor H<sub>2</sub>S concentrations (if gas is sour)  
Maintain log of events and action taken

3. Locate area of release on map which shows location of lines, roads, dwelling, etc.
4. Determine best estimate of:
  - a. Volume being released.
  - b. H<sub>2</sub>S concentration.
  - c. Wind velocity and direction.
  - d. Future volumes and H<sub>2</sub>S concentrations.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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5. Identify residents that should be notified and/or evacuated immediately.
6. Instruct resident notification team to make necessary contacts.
7. Advise the evacuation team of those residents that could not be contacted via telephone, or those that will need assistance.
8. Stay in contact with resident notification and evacuation teams as to whom has been notified, evacuated, etc., making sure a log, of those contacted, is maintained.

### Response Teams, Members, and Duties

**H<sub>2</sub>S MONITORING/CLIMATIC CONDITIONS TEAM** – Responsible for monitoring ambient air concentrations or hazardous gases near a leak area, calculating H<sub>2</sub>S radius of exposure, and monitoring climatic conditions (wind direction, wind velocity, etc.). The team coordinator will keep the Communications Team advised of the monitoring results and any changes that occur.

**ROAD BARRICADE** – Responsible for establishing roadblocks in areas affected by a potentially hazardous leak. Team members may be assisted by the Sheriff's Department and/or Department of Public Safety.

**PUBLIC RELATIONS, COMMUNICATIONS, AND DOCUMENTATION TEAM** – Responsible for coordinating teams, communications between team members, and coordinating duties of public safety officials. The team will document record of events, the safety and control measures taken during the incident. The Coordinator of this team will keep the Superintendent up to date on leak events relating to public relations with the news media, public, and various public safety/fire officers. Safe areas will be established as appropriate.

**EVACUATION TEAM (FIELD)** – Team members will be responsible for notifying and evacuating residents from a hazardous area to a place of safety.



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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Section: Natural Gas  
Release / H<sub>2</sub>S

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## Health Effects of Hydrogen Sulfide\*

Table 5.0

<u>Concentration</u>		<u>Physical Effects</u>
<u>Percent (%)</u>	<u>PPM</u>	
0.0002	2	Odor Threshold.
0.001	10	Obvious and unpleasant odor. Beginning eye irritation. Safe for 8 hours exposure.
0.005	50	Inflammation, corneal blistering, sense of smell decreases, headache, cough, and nausea.
0.01	100	IDLH (Immediately Dangerous to life or health). Kills sense of smell in 3 to 15 minutes; may sting eyes and throat. Drowsiness after 15 to 20 minutes.
0.02	200	Kills sense of smell rapidly; stings eyes and throat.
0.05	500	Dizziness; breathing ceases in a few minutes; needs prompt artificial respiration.
0.07	700	Unconscious quickly; death will result if not rescued properly.
0.10	1000	Unconscious at once, followed by death within minutes

\* REMEMBER: 1% = 10,000 Parts per Million (PPM)



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	6
Section:	HAZWOPER
Revision:	7/1/2007

HAZWOPER stands for "Hazardous Waste Operations and Emergency Response". HAZWOPER is a regulation designed to establish a management plan for emergencies involving hazardous materials. It is applicable to oil field operations primarily through the regulations addressing emergency responses to hazardous substance releases.

HAZWOPER defines an emergency response, or responding to emergencies, as a response effort by employees from outside the immediate release area or by other designated responders (e.g., local fire departments, mutual-aid groups, designated HAZMAT Team, etc.) to an occurrence which results or potentially results in an uncontrolled release of a hazardous substance.

For the purposes of this plan, the term "immediate release area" has been defined as encompassing the Superintendent's geographical area; therefore, if an emergency situation can be mitigated by Anadarko Company personnel, it is not a HAZWOPER Emergency. In the event that an uncontrolled release requires the response of specially trained emergency teams to stop or control the release (e.g. Fire Department, Department of Health Services, etc.), it is a HAZWOPER response and the procedures in this section of the "Emergency Management Plan" must be followed.

## 6.0 HAZWOPER Plan Narrative

### A. Preplanning Response Actions

Preplanning is the key to a successful emergency management plan. Planning is handled through the training of company employees, formulation of emergency response activities, and pre-planned coordination with outside emergency responders. The following items constitute Anadarko's preplanning actions.

All field employees will be trained in Hazard Communication and Emergency Response. This includes hazardous material container labeling, access to, and understanding Material Safety Data sheets, and responding to emergencies involving hazardous materials. Specific emergency scenarios and appropriate responses will be discussed in these training sessions. All field employees will receive training to a minimum of "First Responder Operations Level", as defined by HAZWOPER.

In the event of a HAZWOPER emergency, response activities will be coordinated with contract companies trained to respond to HAZWOPER. The names of these companies and their emergency numbers can be found in the Area Specific Contact Information found in the appendices.



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Emergency Response /  
Oil Spill Contingency Plan

Section No.:	6
Section:	HAZWOPER
Revision:	7/1/2007

**B. Personnel Roles and Lines of Authority**

If an incident is classified as a HAZWOPER response, the Superintendent/ Drilling Foreman responsible for the facility requiring the response shall supervise Anadarko personnel in emergency response activities and perform all reporting requirements pursuant to this Emergency Management Plan. He/she will continue to perform these duties until such time as the responding Emergency Response Team arrives.

Upon the arrival of the trained Emergency Response Team, the ranking official of said team will be designated as the On-Site Incident Commander. After that point, all emergency response activities will be conducted under the direction of the On-Site Incident Commander.

HAZWOPER (Hazardous Waste Operations and Emergency Response) regulations, under the Occupational Safety and Health Administration, cover employees who respond to certain types of emergencies. In order to meet HAZWOPER requirements, the following levels of training are required:	
<b>Level 1</b>	<b>FIRST RESPONDER (AWARENESS LEVEL):</b> A person who witnesses or discovers a release of hazardous material must be trained in how to notify the proper authorities. This level requires training on the Anadarko emergency response manual.
<b>Level 2</b>	<b>FIRST RESPONDER (OPERATIONS LEVEL):</b> A person who responds to releases of hazardous material defensively, without physically trying to approach the point of release. Examples would be shutting isolation valves remote from the release, building dams to divert liquid releases or barricades an area to prevent exposure to the release. This level requires 8 hours of training on items such as personal protective equipment, hazard communication, Anadarko emergency response plan and how to perform basic control and containment operations.
<b>Levels 3 and 4</b>	<b>HAZMAT TECHNICIAN (Level 3) / HAZMAT SPECIALIST (Level 4):</b> These levels require specific training in how to respond aggressively to a release. Anadarko policy is to only react defensively and allow specially trained outside personnel to perform these functions. These levels require at least 24 hours of specific training.
<b>Level 5</b>	<b>ON-SITE INCIDENT COMMANDER:</b> The duties of an on-site incident commander are to assume control of a situation and coordinate all response to the incident (see Section 8 for more specific duties). An on-site incident commander requires at least 24 hours of operations level training, as well as specific training on on-site incident commander duties.



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#### C. Evacuation, Safe Distances, and Places of Refuge

**Evacuation** - The open air nature of oil and gas operations generally permits numerous safe evacuation routes. In areas where this is not the case, employees are directed to attempt escape along a route that takes them upwind of an incident. Crosswind escape is suggested only until upwind escape is appropriate. Wind direction indicators are installed on all properties that contain H<sub>2</sub>S gas. Anadarko's H<sub>2</sub>S training program addresses escape routes and their relationship to wind direction.

**Safe Distances** - Prior to the arrival of the On-Site Incident Commander mentioned in Section B, the Superintendent/Drilling Foreman or designee shall be responsible for establishing the distance from the hazardous scene. After the On-Site Incident Commander arrives on the scene, safe distances will be established at his/her discretion.

**Places of Refuge** should be established as appropriate for Anadarko operations.

#### D. Employee Safety During a HAZWOPER Response

All field employees will be trained to a minimum of "First Responder Operations Level". This training insures that the employee can operate certain equipment on the property during an emergency in order to bring the emergency condition under control. In the course of these operations the employee may be exposed to a hazardous environment, become injured, or have his/her clothing become contaminated with a hazardous material. The following items will address these issues.

**Personal Protection Equipment** (PPE) is available to every employee. The type of equipment available to the employee will vary depending on the hazards inherent in the subject work area. Selection, safe use, limitations, maintenance, care and storage will be thoroughly covered in employee training. The Company's policies and procedures pertaining to PPE are found in the Safety Manual located in each area office. Employee training will include provisions for initial and periodic refresher training.

**Emergency Medical Services** will be provided by local hospitals, urgent care centers, and fire departments. Services have been identified in the Area Specific Contact Information found in the appendices.



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### Emergency Response / Oil Spill Contingency Plan

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**Decontamination** of clothing/equipment will be coordinated with Anadarko's Environmental Health & Safety staff. The MSDS will be consulted for proper disposal of contaminated items.

#### E. Response Evaluation & Follow-Up

An Emergency Response Review Committee has been established for the management and review of Anadarko's emergency responses. After a HAZWOPER response has occurred, the Emergency Response Review committee will submit a report to management discussing the emergency response. A copy of this report will be kept in the files.

The Emergency Response Review Committee includes:

- Operations Manager
- Environmental, Health & Safety Manager
- Environmental or Safety Specialist
- Superintendent
- Operations Foreman

The report will identify:

- Nature and Cause of emergency
- Statistics pertaining to emergency (i.e. damage, injuries, etc.)
- Effectiveness of Company Emergency Response Personnel
- Corrective Measures taken to prevent recurrence of similar emergency at this location (considering applicability to other locations)



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Section:	Communication / Evidence
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## 7.0 GENERAL

It is important when an emergency is identified that the notification hierarchy listed in Sections 9 and the Appendixes are followed. It is mandatory that notices be given internally as soon as practical.

The first person to identify the emergency will report it to his/her supervisor. If a person's supervisor cannot be immediately reached with the known contact (i.e., telephone numbers of home, office, portable phone, or pager) then the next person on the list must be notified. Each person receiving notification is responsible for contacting up the chain of command.

## 7.1 COMMUNICATION TECHNIQUES

1	Communication must be through a two-way confirmed means. Use of messages on a voice recorder or answering machine does not constitute notification. A message may be left, but the next person up the chain of command must be contacted.
2	If a line is busy, advise the operator that you have an emergency and get the operator to interrupt the line.
3	Make sure the person you are communicating with understands you. This can be done by asking them to repeat key parts of your discussion.
4	If you are calling someone you do not frequently talk to, make sure you identify yourself and where you can be reached.
5	If working with a radio communication, call out the person or call sign you want to talk to followed by your call sign (Example: "Station 6, this is home base"). Wait long enough for a response. The person may be away from the radio and may need some time to get back
6	If calling by telephone, let the phone ring at least six times before hanging up.
7	Do not hesitate to call above your supervisor if your supervisor is unreachable.
8	Have relevant information available before starting notification. This does not mean a complete report of everything, but at a minimum the following (See <b>Initial Verbal Media Response</b> as follows):



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## 7.2 COMMUNICATION EQUIPMENT

The primary means of communications will be by telephone and radio.

Field operations that are Anadarko-operated will utilize two-way radio communications and/or mobile telephones. Communications are designed to allow supervisors to be in contact with the Region office.

Drilling and Workover rigs are usually equipped with either radio systems that communicate with the drilling contractor or mobile telephones. All drilling locations will have some means of two-way communications either onsite or within a 15-minute drive (all types of weather).

## 7.3 EMERGENCY RESPONSE ROOM

Depending on the nature and severity of the incident, a local command center may be established, usually at the closest office or facility with telephone and radio communication. For major incidents, the Emergency Response Room, located at Anadarko's Houston office, will be activated, as necessary.

## 7.4 PRESERVING THE EVIDENCE

In the aftermath of a serious incident, it becomes necessary to investigate the incident in order to determine cause and corrective actions. Perhaps the most important aspect of this investigation is determining the facts, and as such, the preservation of the evidence is of great importance.

With the assistance of personnel involved at the incident scene, the evidence can be preserved and a more beneficial investigation performed. The following are basic guidelines which should be followed:

1. Secure the Area

Rope off or other control access into the incident site. Access by non-company personnel allowed only after management approval. The only exception being necessary access by emergency medical rescuers and firefighters.



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#### 2. Preserve the Evidence

As much as possible, don't disturb objects relating to the incident. If unavoidable, stake or mark its location and record what was there. Never allow evidence to leave the scene without approval.

#### 3. Document the Evidence

The Site Supervisor is responsible for preserving all documentation until the investigator(s) arrive at the scene.

#### 4. Identify Witnesses

If persons who witnessed the incident cannot remain on the scene to be interviewed during the investigation, get their names and pertinent information so that they can be located later.

## 7.5 INCIDENT INVESTIGATION

An informal investigation will be conducted on incidents that are considered minor, such as a First Aid only injury, a spill that does not need to be reported to an agency, or a fire with no significant property damage or injury. A formal investigation will occur on more severe incidents. See the Process Safety Management Program Incident Investigation manual for more details. A thorough accident investigation may identify previously overlooked physical, environmental, or process hazards, the need for new or more extensive safety training, or unsafe work practices.

## 7.6 COMMUNITY / PUBLIC AFFAIRS

Communication and public affairs are best handled by persons trained in dealing with the media. A Public Affairs spokesperson should be contacted as part of the emergency notification process. Public Affairs is available 24/7 to consult on media relations and community relations in the event of an emergency. However, there may be times when it is not practical to refer all questions from the media and public to Public Affairs. Indeed, a factual, short response can help reduce the time and effort ultimately needed to respond to the media and public.

The senior ranking Anadarko onsite employee or his/her designate, if approached for a statement, may respond to questions from the media. Ideally, that individual should have already gone through Anadarko-



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sponsored media training and thereby be approved as a spokesperson prior to talking to the reporters in an emergency situation.

The Public Affairs Emergency Hotline number is: **1-888-387-8973**



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## EXAMPLE – EMERGENCY COMMUNICATIONS

### *INITIAL VERBAL MEDIA RESPONSE*

“A \_\_\_\_\_ (release, fire, accident) occurred at Anadarko’s \_\_\_\_\_ (name of facility, location, etc.) in \_\_\_\_\_ (city) at approximately \_\_\_\_\_ (time), \_\_\_\_\_ (date). Anadarko has initiated response activities and authorities have been notified. Additional information will be provided as appropriate.”

General statements below may also be given verbally by site manager and communications director in response to media inquiries:

**General comments for verbal use only in response to media inquiries to be given by site supervisor or communications director as appropriate**

1. “Safety and environmental responsibility are top priorities at Anadarko. While prevention of this type of situation is a core part of our operational strategy, we do prepare for these situations and emphasize internal response training.”
2. “(We are responding) or (Necessary teams are responding) and we will share appropriate information with you when it is available.”
3. Answers to general questions about the site/facility.

<b>1</b>	The response should be a short statement of the facts.
<b>2</b>	Estimates or speculations as to cause or size of the problem must not be made.
<b>3</b>	Information requests for more than the facts relating directly to the immediate emergency (such as our future plans, amount of damage, what other hazards might exist, previous inspections done at the facility, any citations we may have received, etc.) shall be addressed by indicating that a company representative/spokesperson will address the media when more information is known about the incident.
<b>4</b>	If you are going to be questioned in front of a camera, consider your appearance and what will be in the background (behind you) of your interview.
<b>5</b>	If possible, your interview should be done with a neutral or non-threatening background.



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## Southern Region

### Emergency Response / Oil Spill Contingency Plan

Section No.:	8
Section:	Incident Command System (ICS)
Revision:	7/1/2007

## INCIDENT COMMAND SYSTEM

In the 1970's, the Incident Command System (ICS) was formed to provide a consistent organization to respond to various emergency situations. Positions within the ICS are fixed and have specific functions, ensuring that all responders know what to do and where they belong in the structure.

The ICS structure utilized by Anadarko is based on the National Interagency Incident Management System (NIIMS) and is consistent with the National Contingency Plan (NCP). NIIMS ICS provides a commonly understood framework that allows for effective interaction among response personnel. In some cases, ICS information specific to Anadarko has been modified to account for lessons learned during oil spill responses. Otherwise, traditional NIIMS ICS is followed to the extent possible.

The following document is intended to provide guidance to Emergency Management Team members and response personnel regarding the Incident Command System (ICS). It is meant to be a quick-reference and tool for training, not a text on the broad scope of ICS and how it functions.

For additional information regarding ICS and how it applies to Anadarko, please contact the Emergency Preparedness and Response Program Coordinator or your local Environmental Team Member.

#### *References:*

*U.S. Coast Guard Incident Management Handbook, Incident Command System (ICS), COMDTPUB P3120.17, April 2001*

*U.S. Coast Guard Oil Spill Field Operations Guide, ICS-OS420-1, June 2000*

*dbSoft, Inc. Incident Command System Forms, 1997-2006*



# Rocky Mountain Region

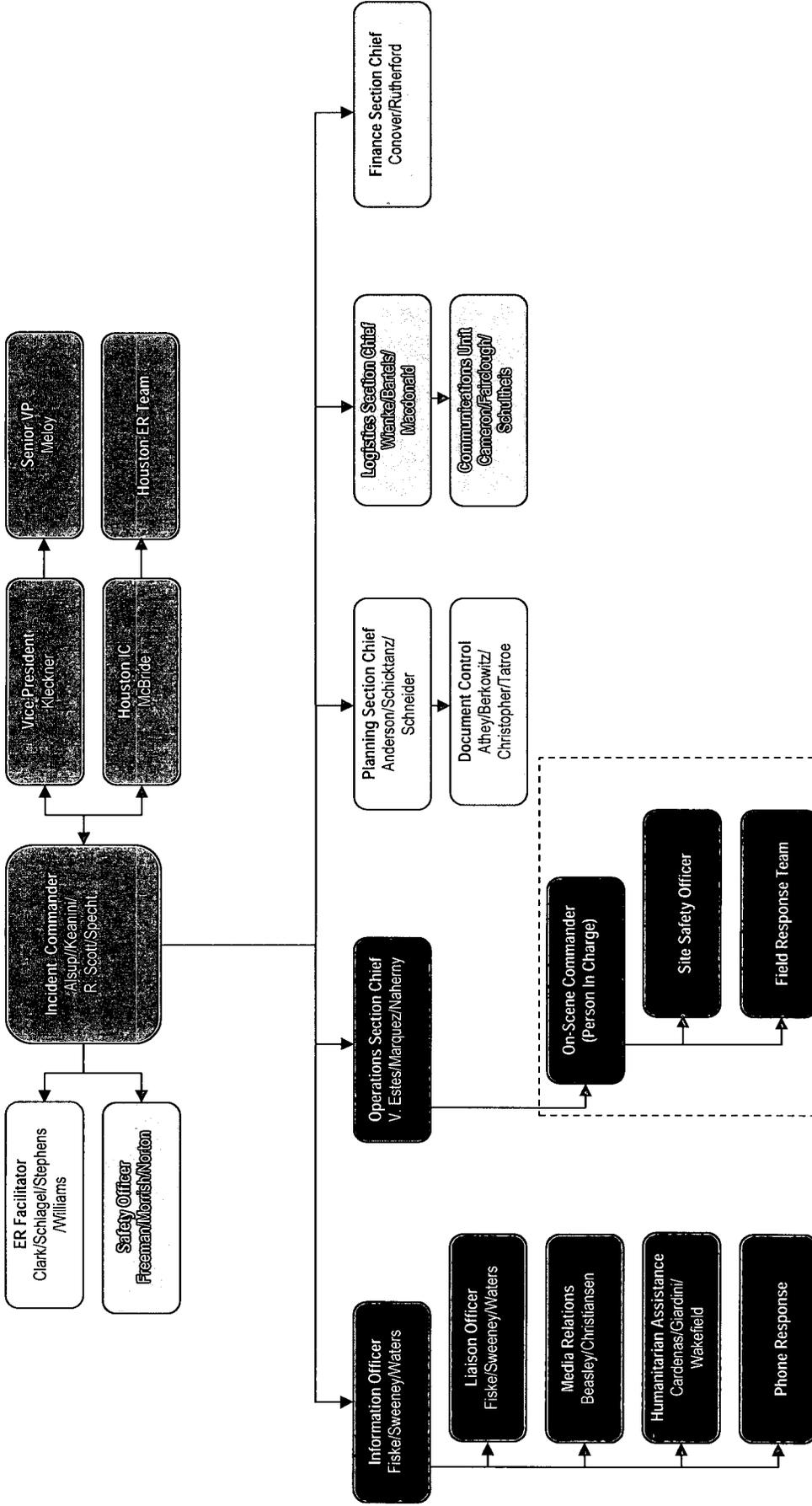
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Section: Incident Command System (ICS)

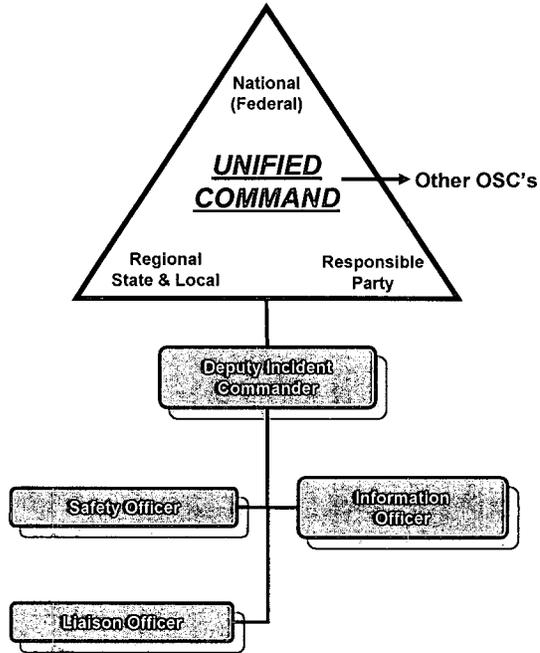
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## Rocky Mountain Emergency Response Team



Field Office Team

### Unified Command



### Unified Command (UC) Representatives must be able to:

1	Agree on common incident objectives and priorities;
2	Have the capability to sustain a 24-hour/7-day/week commitment to the incident;
3	Have the authority to commit agency or company resources to the incident;
4	Have the authority to spend agency or company funds;
5	Agree on an incident response organization;
6	Agree on the appropriate Command and General Staff position assignments to ensure clear direction for on-scene tactical resources;
7	Commit to speak with "one voice" through the IO or JIC, if established;
8	Agree on logistical support procedures; and
9	Agree on cost-sharing procedures, as appropriate.
10	It is important to note that participation in a UC occurs without any agency abdicating authority, responsibility or accountability.



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**Anadarko Emergency Management Team  
Duties and Responsibilities  
Checklist**

**INCIDENT COMMANDER (IC/QI)  
(Qualified Individual)**

*Responsible for overall command and control of emergency response effort*

*	Response Actions
	Assess the situation and determine the appropriate level of response, including requesting assistance from local, State and/or Federal agencies, if necessary.
	Ensure that personnel safety is accorded the highest priority.
	Develop strategic objectives & response priorities to guide response.
	Supervise the overall response to ensure it is consistent with company policy & appropriate government directives.
	Ensure that required notifications are made in a timely manner.
	Establish an ICP and an appropriate organization.
	Brief & coordinate activities with Command Staff and Section Chiefs.
	Assume all duties and responsibilities of the Deputy Incident Commander, if one is not designated.
	Ensure source control & response operations are closely coordinated.
	Ensure planning meetings are scheduled as required.
	Approve and authorize the implementation of an IAP.
	Serve as the Company's primary spokesperson with the news media.
	Review and approve resource allocations and changes as requested.
	Ensure that Management is periodically informed of the status of response operations.
	Keep agency administrator informed of incident status.
	Approve the use of trainees, volunteers, and auxiliary personnel.
	Authorize release of information to the news media.
	Ensure incident Status Summary (ICS Form 209) is completed and forwarded to appropriate higher authority.
	Order the demobilization of the incident when appropriate.



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>SAFETY OFFICER</b>	
<i>Responsible for the overall safety of emergency response operations</i>	
<b>*</b>	<b>Response Actions</b>
	Review Common Responsibilities
	Participate in planning meetings.
	Identify hazardous situations associated with the incident.
	Develop the Site Safety Plan and Medical Plan (ICS Form 206 and 208) as required.
	Provide the Planning Section with health and safety messages for the daily action plans.
	Coordinate safety & health related communications by developing & issuing safety bulletins, alerts, etc., on issues affecting or likely to affect worker safety.
	If temporary assistance is needed, select & supervise contract personnel.
	Ensure that the Finance Section is advised of all cost commitments.
	Ensure that domestic response operations are conducted in compliance with HAZWOPER requirements:
	Provide and/or arrange for safety-related HAZWOPER training for APC, contract, and volunteer personnel. Maintain safety training records.
	Monitor contractors for conformance with safety requirements and associated recordkeeping requirements.
	Record APC safety-related accidents that occur during response operations, and develop remedial actions to avoid future occurrences.
	Ensure compliance with all relevant OSHA requirements. Serve as liaison with Federal and State OSHA Representatives.
	Exercise emergency authority to prevent or stop unsafe acts.
	Set up and implement a system to identify & eliminate safety hazards.
	Locate, set up, and man first aid stations in the field.
	Review the IAP for safety implications.
	Assign specialist appropriate to the response.
	Maintain Individual/Activity Log (ICS Form 214a).



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>LIAISON OFFICER</b>	
<i>Responsible for assuming main point of contact role for regulatory agency involvement</i>	
<b>*</b>	<b>Response Actions</b>
	Review Common Responsibilities.
	Be a contact point for Agency Representatives.
	Document agency notifications using the Notification Status Report.
	Maintain a list of assisting and cooperating agencies and Agency Representatives.
	Monitor check-in sheets daily to ensure that all Agency Representatives are identified.
	Assist in establishing and coordinating interagency contacts.
	Keep agencies supporting the incident aware of incident status.
	Monitor incident operations to identify current or potential inter-organizational problems.
	Participate in planning meetings, providing current resource status, including limitations and capability of assisting agency resources.
	Coordinate response resource needs for Natural Resource Damage Assessment and Restoration (NRDAR) activities with the OPS during oil and HAZMAT responses.
	Coordinate response resource needs for incident investigation activities with the OPS.
	Ensure that all required agency forms, reports and documents are completed prior to demobilization.
	Have debriefing session with the IC prior to departure.
	Coordinate activities of visiting dignitaries
	Maintain Individual/Activity Log (ICS Form 214a).



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#### Anadarko Emergency Management Team Duties and Responsibilities Checklist

#### INFORMATION OFFICER

*Responsible for developing and releasing information about the incident and managing personnel issues due to accidents/injuries*

* Response Actions
Review Common Responsibilities.
Determine from the IC if there are any limits on information release.
Develop material for use in media briefings.
Obtain IC approval of media releases.
Inform media and conduct media briefings.
Arrange for tours and other interviews or briefings that may be required.
Obtain media information that may be useful to incident planning.
Maintain current information summaries and/or displays on the incident and provide information on the status of the incident to assigned personnel.
Ensure that Joint Information Center leadership is assigned.
Maintain Unit/Activity Log (ICS Form 214).



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>OPERATIONS SECTION CHIEF</b>	
<i>Responsible for management of all operations directly applicable to the response effort</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities.
	Supervise the development & distribution of the daily tactical operations plans.
	Review strategic objectives & response priorities (ICS 202) & develop response strategies & tactics to accomplish strategic objectives.
	Ensure that Operations personnel have the equipment, materials, and supplies needed to carry out response operations in a safe, effective, and efficient manner.
	Brief & assign Operations Section personnel in accordance with IAP.
	Provide regular briefings on the nature and status of response ops.
	Coordinate response operations carried out by oil spill cooperatives, response contractors/organizations, and/or government agencies.
	Determine need and request additional resources.
	Request resources needed to implement Operation's tactics part of the Incident Action Plan development (ICS 215).
	Ensure compliance with the Site Safety Plan by all field personnel.
	Make, or approve, expedient changes to the Incident Action Plan during the operational period, as necessary.
	Handle the release/reassignment of response resources.
	Assemble and disassemble strike teams assigned to Operations.
	Report special activities, events, & occurrences to the IC.
	Report any changes in the implementation of the IAP to the Incident Commander, Planning Section Chief, and the Information Officer.
	Respond to resource requests in support of NRDAR activities.
	Maintain Individual/Activity Log (ICS Form 214a).



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>ON-SCENE COMMANDER</b>	
<i>Responsible for organizing and managing on-scene tactical response operations in a safe and effective fashion and for keeping the balance of the Emergency Response Team (ERT) informed about the nature and status of the incident and tactical response operations.</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities.
	Account for all personnel and activate emergency medical activities if necessary.
	Alert other personnel in area about nature and location of incident and, if necessary, establish Isolation Perimeter and evacuate non-responder personnel to a safe area outside perimeter.
	Determine type and level of security needed to maintain Isolation Perimeter; if necessary, establish Security Task.
	Evaluate the severity of the emergency and inform the incident manager.
	Initiate and maintain "Incident Record Sheet".
	Make initial contact with the Incident Commander.
	Make an initial evaluation of the emergency response and establish the need for additional resources.
	Monitor the spill and provide updates to the Operations Section Chief.
	Authorize evacuation.
	Isolate and/or secure the source of the release if it can be done safely.
	Assume on-scene command and establish Field Command Post (FCP).
	Develop site safety plan.
	Compile and maintain appropriate documentation.



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>SITE SAFETY OFFICER</b>	
<i>Responsible for ensuring that all appropriate actions are taken to protect the health and safety of at-the-scene tactical response personnel.</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities
	Travel to Incident scene; check in at Field Command Post (FCP); report to On-scene Commander. If necessary, assist On-scene Commander and/or Safety Officer in determining safe approach guidelines.
	If necessary, assist On-scene Commander in defining Isolation Perimeter, and in determining need to evacuate non-responders from Isolation Zone.
	Receive guidance from On-scene Commander on problem(s) to be addressed, solution(s) to problem(s), and task(s) to be performed.
	Ensure that all the safety procedures are being followed.
	Assist the on-site commander to evaluate the severity of the emergency.
	Initiate and maintain "Incident Record Sheet".
	Develop initial and long term Site Safety Plan (SSP).
	Work with On-scene Commander to institute personnel accountability system at incident scene.
	Initiate mobilization of air monitoring equipment and personnel to the staging area.
	Characterize hazards in area(s) where task(s) are to be carried out before task(s) is/are initiated; and document hazard identification processes used to determine PPE, Control Zones and Decontamination procedures if applicable.
	If necessary, organize and manage a Site Entry Team to carry out on-site Site Characterization.
	Determine PPE and decontamination procedures if necessary.
	Work with On-scene Commander and/or Safety Officer to develop emergency medical procedures.
	Evaluate need for first aid at incident scene; establish first aid station(s).
	If tactical response operations are broken down into Branches and/or Divisions, determine need for Site Safety Officer(s) at Branch and/or Division level(s).
	Participate in all related investigations; issue Safety Bulletin(s).
	Work with Sources Control Section Chief.
	Advise Logistics Section Chief and/or Operations Section Chief regarding food, water, shelter, and sanitary requirements for tactical responders.
	Compile and maintain appropriate documentation.
	Maintain Individual/Activity Log (ICS Form 214a).



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>LOGISTICS SECTION CHIEF</b>	
<i>Responsible for providing facilities, services and material in support of the incident.</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities.
	Plan the organization of the Logistics Section.
	Assign work locations and preliminary work tasks to Section personnel.
	Notify the Resources Unit of the Logistics Section units activated including names and locations of assigned personnel.
	Participate in preparation of the IAP.
	Assist the Resource Unit in the development of the ICS 215 Operational Planning Worksheet and order additional resources identified using the ICS 215.
	Identify service and support requirements for planned and expected operations.
	Provide input to and review the Communications Plan and Traffic Plan.
	Coordinate and process requests for additional resources.
	Communicate with Resource Unit & Staging Area Manager regarding ordered/en-route resources.
	Review IAP & estimate Section needs for the next operational period.
	Advise on current service and support capabilities.
	Prepare service and support elements of the IAP and estimate future requirements.
	Receive Incident Demobilization Plan from Planning Section.
	Recommend release of Unit resources in conformity with Incident Demobilization Plan.
	Ensure the general welfare and safety of Logistics Section personnel.
	Maintain Unit/Activity Log (ICS Form 214).



<b>Rocky Mountain Region</b>	
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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>COMMUNICATIONS UNIT LEADER</b>	
<i>Responsible for developing plans for the effective use of incident communications equipment and facilities.</i>	
*	<b>Response Actions</b>
	Review Unit Leader Responsibilities
	Determine Unit personnel needs and assign Communications Specialists.
	Set up telephone and public address systems.
	Prepare and implement the Incident Radio Communications Plan (ICS Form 205).
	Ensure the Incident Communications Center, Field Communications Division/Group Supervisors, and the Message Center is established.
	Establish appropriate communications distribution/maintenance locations including radio/cellular battery recharge facilities
	Ensure communications systems are installed and tested.
	Ensure an equipment accountability system is established.
	Ensure personal portable radio equipment from cache is distributed per Incident Radio Communications Plan.
	Provide technical information as required on:
	- Adequacy of communications systems currently in operation.
	- Geographic limitation on communications systems.
	- Equipment capabilities/limitations.
	- Amount and types of equipment available.
	- Anticipated problems in the use of communications equipment.
	Supervise Communications Unit activities.
	Maintain records on all communications equipment as appropriate.
	Ensure equipment is tested and repaired.
	Recover equipment from Units being demobilized.
	Maintain Unit/Activity Log (ICS Form 214).



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>PLANNING SECTION CHIEF</b>	
<i>Responsible for the collection, evaluation, dissemination and use of information about the development of the incident and the status of resources.</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities.
	Notify Regulatory Agencies.
	Collect and process up-to-date situation information about the incident.
	Ensure that systems are established that will facilitate the collection, evaluation, analysis, and dissemination of information and data.
	Coordinate with the Unified Command to establish a meeting schedule to support the preparation of Incident Action Plans (Planning Cycle)
	Provide input to the IC and the OPS in preparing the IAP.
	Prepare Daily Strategic Objectives (ICS 202) and assist Incident Commander in development of Overall Strategic Objectives.
	Ensure environmental issues are being appropriately coordinated
	Chair planning meetings and participate in other meetings as required.
	Brief Section Unit Leaders on the results of meetings, the contents of Incident Action Plans, and other matters related to section operations.
	Determine need for any specialized resources in support of incident.
	Supervise the compilation of environmental information necessary to obtain government agency permits and approvals.
	Oversee preparation and implementation of the Demobilization Plan.
	Supervise the preparation of the IAP & incorporate plans (e.g., Traffic, Medical, Communications, Site Safety) into the IAP.
	Identify sensitive areas and recommend response priorities.
	Following consultation with natural resource trustees, provide input on wildlife protection strategies (e.g., removing oiled carcasses, pre-emptive capture, hazing, and/or capture and treatment).
	Determine the extent, fate, and effects of contamination.
	Acquire, distribute, and provide analysis of weather forecasts.
	Monitor the environmental consequences of cleanup actions.
	Identify the need for, and obtain, permits, consultations, and other authorizations including Endangered Species Act (ESA) provisions.
	Historical/Cultural Resources Technical Specialist identify and develop plans for protection of affected historical/cultural resources.
	Develop disposal plans.



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>PLANNING SECTION CHIEF (cont.)</b>	
<i>Responsible for environmental matters associated with the response, including strategic assessment, modeling, surveillance, and environmental monitoring and permitting.</i>	
*	<b>Response Actions</b>
	Develop a plan for collecting, transporting, and analyzing samples.
	Maintain Unit/Activity Log (ICS Form 214).
	Display the following situation status information: i. Map(s) depicting the location of environmentally sensitive areas, group(s) assigned to wildlife capture and/or Natural Resource Damage Assessment operations, and/or Waste Storage and Disposal Facilities. ii. Type and number of wildlife captured, cleaned, rehabilitated, and released. iii. Type and quantity of waste materials collected, stored, and disposed of at agency approved facilities.
	Identify sensitive resources that could be affected and help determine priorities and methods of protection.
	Advise the Public/Government Affairs Officer on the appropriate environmental regulatory agencies that should be notified and kept informed on the status of response operations and their impact on the environment.
	Provide the Operations Section Chief with current and predicted weather and oceanographic data.
	Design a Monitoring Program, including the collection and preservation of samples from affected and unaffected areas.
	Work with agencies to identify environmentally sensitive areas and wildlife habitats.
	Coordinate wildlife rescue and rehabilitation operations with federal and state resource agencies.
	Identify experts to conduct wildlife capture, transport, cleaning, rehabilitation, and release operations.
	Coordinate with the U.S. Fish and Wildlife Service the recovery, transfer, and/or disposal of animal carcasses.



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>DOCUMENTATION UNIT LEADER</b>	
<i>Responsible for the maintenance of accurate, up-to-date, incident files.</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities.
	Review Unit Leader Responsibilities.
	Establish documentation "in-box" in each section.
	Coordinate with the Situation Unit Leader to compile up-to-date information & the maintenance of the Display and Distribution Center
	Set up work area; begin organization of incident files.
	Establish duplication service; respond to requests.
	File all official forms and reports.
	Attend daily Planning and Briefing Meetings as requested by Planning Section Chief.
	Review records for accuracy and completeness; inform appropriate units of errors or omissions.
	Work with the Legal Officer to develop Documentation Guidelines for distribution to appropriate response personnel.
	Provide incident documentation as requested.
	Store files for post-incident use.
	Collect all Unit Logs (ICS 214s) and Individual Logs (ICS 214a) and related documentation prior to demobilization.
	Maintain Unit/Activity Log (ICS Form 214).



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Anadarko Emergency Management Team Duties and Responsibilities Checklist	
<b>FINANCE SECTION CHIEF - FSC</b>	
<i>Responsible for all financial, administrative, and cost analysis aspects of the incident and for supervising members of the Finance section.</i>	
*	<b>Response Actions</b>
	Review Common Responsibilities
	Attend planning meetings as required.
	Manage all financial aspects of an incident.
	Ensure that appropriate cost and accounting control systems are established.
	Provide adequate accounting systems, including auditing, billing and documenting labor, material and services used.
	Provide financial and cost analysis information as requested.
	Gather pertinent information from briefings with responsible agencies.
	Develop an operating plan for the Finance/Administration Section; fill supply and support needs.
	Coordinate with Logistics Section and Resource Unit regarding equipment resources and associated status for cost accounting purposes
	Determine the need to set up and operate an incident commissary.
	Meet with Assisting and Cooperating Agency Representatives, as needed.
	Maintain daily contact with agency(s) administrative headquarters on Finance/Administration matters.
	Ensure that all personnel time records are accurately completed and transmitted to home agencies, according to policy.
	Provide financial input to demobilization planning.
	Ensure that all obligation documents initiated at the incident are properly prepared and completed.
	Brief agency administrative personnel on all incident-related financial issues needing attention or follow-up prior to leaving incident.
	Maintain Unit/Activity Log (ICS Form 214).



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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## Rocky Mountain Region Emergency Response Team Contact Information

Name	Title	Office	Cell	Home
<b>Incident Commander</b>				
Alsup, Jim	General Manager, Operations	720.264.2742	303.653.8713	303.799.8633
Keanini, Dave	General Manager, Engineering	303.450.8402	303.884.3125	303.428.2595
Scott, Reed	General Manager, Business Services	720.264.2790	303.916.6206	303.346.9016
Specht, Rex	Operations Manager	303.252.6246	303.241.3582	720.851.5506
<b>ER Facilitator</b>				
Clark, Terry	Health & Safety Manager	303.450.3597	303.887.2488	303.460.8651
Schlagel, Phil	EHS Manager	720.264.6798	720.470.9215	303.954.8222
Stephens, Dave	EHS Manager	303.450.8418	303.550.0706	303.550.0706
Williams, Alan	Director, EHS	720.264.2732	303.819.1252	720.887.5807
<b>Safety Officer</b>				
Freeman, Joe	Health & Safety Supervisor	720.264.2810	303.710.9988	970.587.0945
Morrish, Rick	Staff Safety & Health Analyst	303.655.4305	303.570.4745	303.457.3590
Norton, Matt	Sr. Regulator Analyst	303.450.8466	719.964.7923	303.799.6718
<b>Information Officer &amp; Liaison Officer</b>				
Fiske, Jeff	Sr. Counsel	720.264.2804	303.908.1661	303.793.0716
Sweeney, Patty	Human Resources Manager	720.264.2844	303.241.1030	303.770.9553
Waters, Richard	Sr. Counsel	720.264.6703	303.548.5605	720.344.2809
<b>Humanitarian Response</b>				
Cardenas, Ron	Sr. Staff HS Business Partner	307.437.9534	303.328.8659	720.890.4077
Giardini, Linda	Sr. Staff HS Business Partner	970.506.5871	303.819.1797	970.353.9879
Wakefield, Julie	HR Rep. II	720.264.2803	303.710.0176	720.977.7121
<b>Vice President</b>				
Kleckner, Jim	VP Operations - Rockies	720.264.2800	303.250.4804	303.763.6953
<b>Planning Section Chief</b>				
Anderson, Don	Env. & Reg. Supervisor	303.450.8411	303.807.7691	303.971.0458
Schicktanzt, Ed	Env. & Reg. Supervisor	720.264.2717	303.868.0937	303.840.8371
Schneider, Paul	Staff EHS & Reg. Analyst	720.264.2715	303.868.6665	303.697.1360
<b>Operations Section Chief</b>				
Estes, Vic	Drilling Manager	720.264.2823	832.217.8088	281.370.7970
Marques, Tony	Engineering Manager	303.450.8423	303.815.4377	303.469.9196
Naherny, Brent	Production Eng. Manager	720.264.6748	720.284.1112	303.862.7336
<b>Logistics Officer</b>				
Bartels, Cal	Supply Chain Advisor	970.506.5866	970.590.6272	970.867.5707
Macdonald, Rindee	Sr. Supply Chain Rep.	720.264.2765	303.489.0599	303.773.3930



## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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Name	Title	Office	Cell	Home	
Wienke, Pat	Supply Chain Supervisor	720.264.6675	281.723.7536	303.660.1641	
<b>Technical Support</b>					
Sanchez, Joseph	Staff Engineer	303.655.4319	303.901.6560	303.654.1625	
<b>Communications Unit</b>					
Cameron, Jim	Global Customer Support Mgr.	303.252.6039	303.349.8915	303.341.1103	
Fairclough, Diane	Customer Support Center Mgr.	720.264.2677	720.560.5428	720.560.5428	
Schultheis, Mark	Enterprise Computing Manager	303.349.8579	303.349.8579	303.828.4638	
<b>Finance Section Chief</b>					
Conover, Christy	Accounts Payable Supervisor	303.252.6050	303.601.6248	303.655.1770	
Rutherford, Stephanie	Property Accounting Manager	303.252.6115	303.868.8176	303.440.7088	
<b>Document Control</b>					
Athey, Pat	Sr. Administrative Assistant	720.264.2701	303.710.0637	303.762.9377	
Berkowitz, Stacey	Staff Administrative Assistant	720.264.2754	303.489.6016	303.142.9321	
Christopher, Shawnda	Sr. Operations Specialist	303.252.6030	303.242.6106	303.650.4398	
Tatroe, Keith	EHS Specialist II	720.264.2716	303.919.1494	303.252.8816	
<b>ERT Support</b>					
Duncan, Mike	Sr. Staff EHS Specialist	Midwest	307.437.9518	307.262.9804	307.437.6295
Estes, Carroll	Staff EHS & Reg. Analyst	Vernal	435.781.7009	435.828.7009	435.789.3301
Faber, Colleen	Sr. Regulatory Analyst	Gillette	307.685.5741	307.660.1602	303.685.1570
Farrell, John	Sr. Env. & Reg. Analyst	Midwest	307.437.9568	307.262.1940	307.266.1220
Gallagher, Adam	Sr. Env. & Reg. Analyst	Gillette	307.685.5768	307.660.2741	307.756.3407
Hamilton, Greg	EHS Analyst	Evans	970.506.5948	970.590.6256	970.304.9304
Henry, Tami	Staff EHS Specialist	Gillette	307.685.5771	307.680.9824	307.685.4434
Hutzenbiler, Lea	Safety & Health Analyst II	Rock Springs	307.352.3316	307.354.8040	307.362.5940
Jackson, Henry	Safety & Health Supv.	Casper	307.233.4522	307.262.2899	307.235.9946
Kalivas, Tom	Staff EHS Specialist	Gillette	307.685.5765	307.680.4365	NA
Kalus, Tim	Sr. Water Mgmt. Coord.	Gillette	307.685.5742	307.660.1480	307.684.7540
Lass, Joel	Sr. S&H Analyst	Gillette	307.685.4135	307.660.0079	307.660.0079
Lingo, Steve	Sr. Staff EHS Specialist	Midwest	307.437.9509	307.262.9793	307.437.6614
Muller, John	Staff S&H Analyst	Midwest	307.437.9507	307.259.1167	307.235.3329
Peterson, Bret	Env. & Regulatory Supv.	Denver	303.252.6146	303.521.7506	NA
Salazar, Rick	Staff EHS & Reg. Analyst	Vernal	435.781.7043	435.828.7063	435.789.3003
Schweighart, Jeff	Sr. Regulatory Analyst	Gillette	307.328.7063	307.272.5201	307.388.4663
Spencer, Tim	Staff S&H Analyst	Evans	970.506.5925	970.590.6252	970.351.6438
Thingelstad, Rebecca	EHS Analyst I	Woodlands	303.252.6183	832.381.4584	
Wolberg, Peter	Staff EHS & Reg. Analyst	Denver	303.252.6105	303.257.6884	NA
Zimbelman, David	Sr. Staff EHS Specialist	Gillette	307.685.5761	307.660.1620	NA



## Southern Region

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## Houston Emergency Response Team

Name	Title	Office	Office	Cellular	Home
Cowan, Dennis	Director, Safety & Health	Woodlands	832.636.2600	713.819.8625	281.719.0789
Grygar, Bill	Env. & Regulatory Manager	Woodlands	832.636.2656	281.386.6459	281.374.9622
McBride, David	VP, EHS	Woodlands	832.636.4896	832.474.1926	281.367.0260
Meloy, Chuck	Sr. VP, Worldwide OPS	Woodlands	832.636.1601	713.876.6465	281.430.4129
Prihoda, Paul	Safety & Health Manager	Woodlands	832.636.2601	713.828.8242	832.731.0070
Weissling, Kent	Sr. Staff Env. & Reg. Analyst	Woodlands	832.636.2368	713.775.9591	281.225.6407
<b>Media Relations</b>					
Beasley, Paula	Senior Public Affairs Rep.	Woodlands	832.636.8765	281.728.4426	281.225.4519
Christiansen, John	External Communications Mgr.	Woodlands	832.636.8736	832.434.6884	281.252.8594



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# SPILL REPORTING

## NEW MEXICO

OIL • CONDENSATE • PRODUCED WATER SPILLS

### FEDERAL NOTIFICATIONS

Immediately report any oil, condensate or produced water spill/discharge into navigable waters or adjoining shorelines to the National Response Center (NRC) at (800) 424-8802.

For spills on Federal Land as described below, notify the Bureau of Land Management (BLM) Farmington District Office at (505) 599-8900:

#### Major Breaks, Spills, or Leaks:

- Uncontained spills greater than 100 barrels of liquid or any spill in a sensitive area requires phone notification within 24 hours and a written notice within 15 days.

#### Minor Breaks, Spills, or Leaks:

- Uncontained spills between 10 and 100 barrels of liquid, or contained spills greater than 100 barrels of liquid requires written report within 15 days.

### STATE NOTIFICATIONS

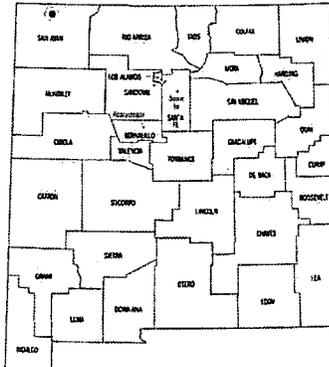
Immediately report (within 24 hours after discovery) the following major spills to the New Mexico Oil Conservation Division (NMOCD) Aztec District Office at (505) 334-6178. Follow up with a written report (NMOCD Form C-141) to the NMOCD District Office within 15 days.

- Oil, condensate or produced water spills greater than 25 barrels
- Any oil, condensate or produced water spill that results in a fire
- Any oil, condensate or produced water spill that will reach a watercourse
- Any oil, condensate or produced water spill that endangers the public or results in substantial damage

Report oil, condensate or produced water spills greater than 5 barrels but not more than 25 barrels in a written report to the NMOCD Aztec District Office within 15 days.

Immediately report any oil, condensate or produced water spill which could endanger human health, animal or plant life, or property to the New Mexico Environment Department (NMED) at (505) 827-1758. Follow up with a written report within 7 days.

For chemical spills contact the EHS Department for assistance.



ANADARKO  
FIELD OFFICE LOCATIONS

- Kirtland

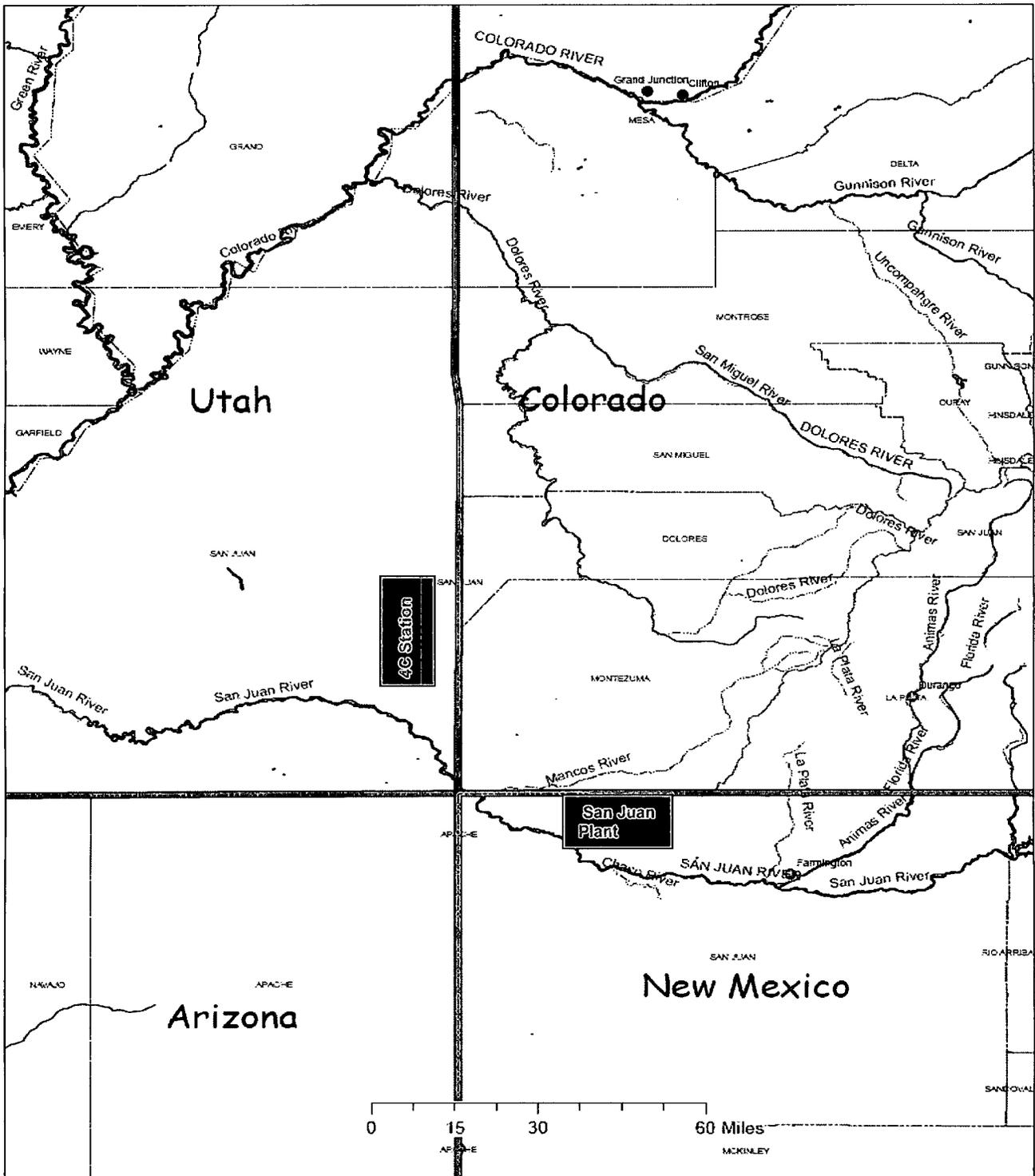
**Anadarko**  
Petroleum Corporation



# Southern Region

## Emergency Response / Oil Spill Contingency Plan

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## Southern Region

### Emergency Response / Oil Spill Contingency Plan

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## San Juan Basin Area

### Critical Water Use Areas

Barkers Arroyo  
Coal Bed Canyon  
Montezuma Canyon  
San Juan River  
Youngs Lake

During a storm event, the potential also exists for a discharge to reach one of the critical water use areas listed above via intermittent or dry creek beds in the area.

### Risk Assessment and Response Strategy

The total daily liquid production rate at each facility in this area is very small, however condensate volumes collected during gathering line pigging operations can be as much as 300 barrels of condensate per day. For planning purposes, the worst-case discharge is therefore the volume of condensate that could be released during a pipeline pigging operation, or 300 barrels.

A discharge of this quantity of oil could potentially reach one of the critical water use areas listed above. The response strategy for this type of release consists of calling out designated spill response contractors who would deploy booms and other response equipment at various points downstream from the spill area to prevent migration and strategically place booms to protect any irrigation water intakes or other sensitive receptors. The response equipment to be used for such an event is listed in Section C.5 – Spill Response.



## Southern Region

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## San Juan Basin Area Notification Internal / Agencies

### C.1 OFFICES

Office	Address	Phone #	Fax #
Houston Office	1201 Lake Robbins Drive The Woodlands, TX 77380	832.636.1000	
San Juan River Plant	P. O. Box 70 Kirkland, NM 87417	505.598.5601	505-598-6210

### C.2 INTERNAL NOTIFICATIONS

San Juan River Plant Mid Stream				
Name	Title	Office #	Cell #	Home #
Mario Reyes	General Manager	832.636.3431	832.636.5446	281.296.0385
Kent McEvers	Plant Supt	505.598.5601 ext 15523	505.860.7208	505.326.4054
Rich Fetch	Plant Foreman	505.598.5601 ext15522	505.947.2416	505.324.6441
Frank Hale	Plant Operator IV	505.598.5601	505.860.5897	505.598.9091
Glen Daniell	Plant Operator IV	505.598.5601		505.632.9705
Arlyn Thorson	Sr Maintenance Foreman	505.598.5601 ext 15524	505.947.2417	505.326.6718
Charles Barr	Mechanic I	505.598.5601 ext 15541	505.324.1100	505.330.2614
Bob McClain	Operator II	505.598.5601 ext 15542	505.330.1966	505.325.8715
Brenda Wilson	Sr Ops Specialist	505.598.5601 ext 15521		505.325.6525
Eric Weaver	Sr. EHS Analyst	432.684.2808	432.413.2494	432.634.1997
Julie Betik	Sr Staff Env & Reg Analyst	832.636.2609	281.793.7705	281-320-2066
David Ponikvar	S & H Manager	832.636.3414	281.732.7887	281-374-8334
Jerry Adams	Env. Manager	832.636.8304	281.731.5931	281.363.4693



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### C.3 FEDERAL AND STATE NOTIFICATIONS

Federal	Daytime/24 Hrs.	After Hours
NRC Hotline	800.424.8802	
EPA (Region 8)	800.227.8917	
OSHA	800.321.6742	
OSHA area office New Mexico	505.827.4230	
DOT	800.424.8802	
State	Daytime/24 Hrs.	After Hours
BLM Farmington District Office	505.599.8900	
Arizona Oil & Gas Conservation Commission	520.770.3500	
Arizona Department of Environmental Quality	800.234.5677	
Arizona Emergency Response Commission	602.771.2330	
Colorado Division of Emergency Management	303.279.8855	
Colorado Department of Public Health & Environment	877.518.5608	
Colorado Oil & Gas Commission	303.894.2100	
Colorado Public Utilities Commission	303.894.2854	
New Mexico Oil Conservation Division	505.334.6178	
New Mexico Environmental Department	505.476.4300	
New Mexico Emergency Response Commission	505.476.9681	
New Mexico Public Utilities Commission	505.490.2375	
Utah Division of Oil, Gas, Mining	801.538.5340	801.243.9466
Utah Division of Wildlife Resources	801.538.4700	
Utah Division of Public Utilities	801.530.6673	
Utah Department of Environmental Quality Division of Water Quality	801.536.4123	
New Mexico One Call	800.321.2537	
Law Enforcement Emergency Dispatch	911	
New Mexico State Patrol	505.325.7547	
New Mexico FBI	505.325.8631	
San Juan County Sheriff New Mexico	505.334.6622	
Farmington Police	505.327.0222	
Navajo Tribal Police	505.368.4333	
Ute Mountain BIA	303.565.8471	



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LEPC Name	Street	City	State	Zip Code	Phone Number
San Juan County NM LEPC	209 South Oliver	Aztec	NM	87410	505.334.1180

Name	Emergency Service	Phone Number
Emergency Dispatch	Fire Department	911
San Juan County Fire Marshall	Fire Department	505.334.9431
Emergency Dispatch	Ambulance	911
San Juan Regional Medical Center	Hospital	506.325.5011
Emergency Trauma Lifeline Service Farmington		505.325.5602
University of Utah Medical Center Salt Lake City, Utah	Hospital	800.453.0120
Dr Robert C Rhien	Doctor	505.327.4867
Dr Ken Crider	Doctor	505.327.4439
San Juan Air Care Farmington NM	Air Ambulance	800.452.9990
University of Utah Medical Center Salt Lake City, Utah	Air Ambulance	800.453.0120
St. Mary's Air Life Grand Grand Junction, Colorado	Air Ambulance	800.525.4424

#### C.4 CONTRACTORS

Contractor	Contact	Office Phone Number	Cell Phone Number
<b>Contractors - General</b>			
Weeminuche Construction	Benton Dean	970.565.7430	
IMI Construction		505.325.5005	
<b>Service Companies - Saltwater Disposal</b>			



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<b>Service Companies - Supplies</b>			
Noels Inc.		505.327.3375	
ESSO Pipe and Supply		505.325.7568	
Air Gas		505.325.6660	
DXP	Steve Martinez	505.326.3333	
DeWees Tool & Supply		505.326.5491	
<b>Emergency Response and Environmental / Safety Services</b>			
ChemTrec		800.424.9300	
<b>Electrician Contacts</b>			
Four Corners Electric		505.325.1459	
B&G Electric		505.325.7511	
<b>Other Area Producers</b>			
	<b>Contact</b>	<b>Office Phone Number</b>	<b>Emergency Phone</b>
<b>Burr Oil and Gas</b>	Deana	505-325-1701	
1090 20 <sup>th</sup> St.	Jim Hicks	505-320-7883	
Farmington, NM 87401	Office	505-327-4902	
<b>Conoco/Burlington</b>	Jerry Lodermilk cell	505-320-0452	
Gas Control	Rena	505-330 -2946	
<b>DJ Simmons Company</b>	John Byrom	505.326.3753	
<b>Elm Ridge Resources</b>	Office	632-3476 Ext 210	
20th Road 5060 Bloomfield, New Mexico 87413	Terry Lindeman	972-749-6941	
<b>El Paso Natural Gas</b>		505.632.6000	800.334.80 47
<b>Nacogdoches Oil and Gas</b>			
Nacogdoches, Texas (Mountain States)	Arron	936-697-3750	
<b>Resolute Natural Resources</b>	Office	970-564-5200	
23429 County Road G	Montezuma Creek office	435-651-3682	
Cortez, Colorado 81321	(Roger Atcity) Cell	435-444-0001	
	Office	505-327-5531	



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	Appendix: San Juan Basin
	Revision: 01/15/2009

<b>Rim SouthWest Corporation</b>			
512 West Arrington Farmington, New Mexico 87401	Thelma Dee	435-651-4391	
<b>XTO Energy Inc.</b>			
2700 Farmington Ave Farmington, New Mexico 87401	Office	505-324-1090	
	John Weaver Cell	505-330-3278	

### C.5 SPILL RESPONSE

HAZ-MAT EQUIPMENT LIST (Available at San Juan Plant)
Booms Large and small
Rubber Gloves
Half-face Disposable Respirators
Tyvek Suits
Buckets and Sprayer
Barbed Wire, Tee Post, and Carious Ropes
Sorbent pads oil only and universal type
Goggles
Nitrile Gloves
Latex Overcoat
Hylite rubber gloves
Rain Coats and pants
Caution and Duct Tape
Rakes and shovels
Disposable Boom
Fire Extinguishers & First Aid Kits
Breathing Air units Survivair , MSA and Scbag
Bow Saw



Southern Region

Emergency Response /  
Oil Spill Contingency Plan

Appendix No.: C

Appendix: San Juan Basin

Revision: 01/15/2009

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
900 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company	Contact	
Address	Telephone No.	
Facility Name	Facility Type	
Surface Owner	Mineral Owner	Lease No.

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

Type of Release	Volume of Release	Volume Recovered
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

Describe Area Affected and Cleanup Action Taken.\*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:		<b>OIL CONSERVATION DIVISION</b>	
Printed Name:		Approved by District Supervisor:	
Title:	Approval Date:	Expiration Date:	
E-mail Address:	Conditions of Approval:		Attached <input type="checkbox"/>
Date:	Phone:		

Attach Additional Sheets If Necessary

116 RELEASE NOTIFICATION AND CORRECTIVE ACTION [1-1-50...2-1-96; A, 3-15-97]

116.A. NOTIFICATION

(1) The Division shall be notified of any unauthorized release occurring during the drilling, producing, storing, disposing, injecting, transporting, servicing or processing of crude oil, natural gases, produced water, condensate or oil field waste including Regulated NORM, or other oil field related chemicals, contaminants or mixture thereof, in the State of New Mexico in accordance with the requirements of this Rule. [1-1-50...2-1-96; A, 3-15-97]

(2) The Division shall be notified in accordance with this Rule with respect to any release from any facility of oil or other water contaminant, in such quantity as may with reasonable probability be detrimental to water or cause an exceedance of the standards in 19 NMAC 15.A.19. B(1), B(2) or B(3). [3-15-97]

116.B. REPORTING REQUIREMENTS: Notification of the above releases shall be made by the person operating or controlling either the release or the location of the release in accordance with the following requirements: [5-22-73...2-1-96; A, 3-15-97]

(1) A **Major Release** shall be reported by giving **both** immediate verbal notice and timely written notice pursuant to Paragraphs C(1) and C(2) of this Rule. A Major Release is:

- (a) an unauthorized release of a volume, excluding natural gases, in excess of 25 barrels;
- (b) an unauthorized release of any volume which:
  - (i) results in a fire;
  - (ii) will reach a water course;
  - (iii) may with reasonable probability endanger public health; or
  - (iv) results in substantial damage to property or the environment;
- (c) an unauthorized release of natural gases in excess of 500 mcf; or
- (d) a release of any volume which may with reasonable probability be detrimental to water or cause an exceedance of the standards in 19 NMAC 15.A.19. B(1), B(2) or B(3). [3/15/97]

(2) A **Minor Release** shall be reported by giving timely written notice pursuant to Paragraph C(2) of this Rule. A Minor Release is an unauthorized release of a volume, greater than 5 barrels but not more than 25 barrels; or greater than 50 mcf but less than 500 mcf of natural gases. [3-15-97]

116.C. CONTENTS OF NOTIFICATION

(1) **Immediate verbal notification** required pursuant to Paragraph B shall be reported within twenty-four (24) hours of discovery to the Division District Office for the area within which the release takes place. In addition, immediate verbal notification pursuant to Subparagraph B.(1).(d). shall be reported to the Division's Environmental Bureau Chief. This notification shall provide the information required on Division Form C-141. [5-22-73 . 2-1-96; A, 3-15-97]

(2) **Timely written notification** is required to be reported pursuant to Paragraph B within fifteen (15) days to the Division District Office for the area within which the release takes place by completing and filing Division Form C-141. In addition, timely written notification required pursuant to Subparagraph B.(1).(d). shall also be reported to the Division's Environmental Bureau Chief within fifteen (15) days after the release is discovered. The written notification shall verify the prior verbal notification and provide any appropriate additions or corrections to the information contained in the prior verbal notification. [5-22-73...2-1-96; A, 3-15-97]

116.D. CORRECTIVE ACTION: The responsible person must complete Division approved corrective action for releases which endanger public health or the environment. Releases will be addressed in accordance with a remediation plan submitted to and approved by the Division or with an abatement plan submitted in accordance with Rule 19 (19 NMAC 15.A. 19). [3-15-97]

**APPENDIX F – NEW MEXICO REGULATIONS**

**TITLE 19 NATURAL RESOURCES AND WILDLIFE  
CHAPTER 15 OIL AND GAS  
PART 29 RELEASE NOTIFICATIONS**

**19.15.29.1 ISSUING AGENCY:** Energy, Minerals and Natural Resources Department, Oil Conservation Division.  
[19.15.29.1 NMAC - N, 12/1/08]

**19.15.29.2 SCOPE:** 19.15.29 NMAC applies to persons engaged in oil and gas development and production within New Mexico.  
[19.15.29.2 NMAC - N, 12/1/08]

**19.15.29.3 STATUTORY AUTHORITY:** 19.15.29 NMAC is adopted pursuant to the Oil and Gas Act, NMSA 1978, Section 70-2-6, Section 70-2-11 and Section 70-2-12.  
[19.15.29.3 NMAC - N, 12/1/08]

**19.15.29.4 DURATION:** Permanent.  
[19.15.29.4 NMAC - N, 12/1/08]

**19.15.29.5 EFFECTIVE DATE:** December 1, 2008, unless a later date is cited at the end of a section.  
[19.15.29.5 NMAC - N, 12/1/08]

**19.15.29.6 OBJECTIVE:** To require persons who operate or control the release or the location of the release to report the unauthorized release of oil, gases, produced water, condensate or oil field waste including regulated NORM, or other oil field related chemicals, contaminants or mixtures of those chemicals or contaminants that occur during drilling, producing, storing, disposing, injecting, transporting, servicing or processing and to establish reporting procedures.  
[19.15.29.6 NMAC - N, 12/1/08]

**19.15.29.7 DEFINITIONS:**

A. "Major release" means:

(1) an unauthorized release of a volume, excluding gases, in excess of 25 barrels;

(2) an unauthorized release of a volume that:

(a) results in a fire;

(b) will reach a watercourse;

(c) may with reasonable probability endanger public health; or

(d) results in substantial damage to property or the environment;

(3) an unauthorized release of gases in excess of 500 MCF; or

(4) a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC.

B. "Minor release" means an unauthorized release of a volume, greater than five barrels but not more than 25 barrels; or greater than 50 MCF but less than 500 MCF of gases.

[19.15.29.7 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**19.15.29.8 RELEASE NOTIFICATION:**

A. The person operating or controlling either the release or the location of the release shall notify the division of unauthorized release occurring during the drilling, producing, storing, disposing, injecting, transporting, servicing or processing of oil, gases, produced water, condensate or oil field waste including regulated NORM, or other oil field related chemicals, contaminants or mixture of the chemicals or contaminants, in accordance with the requirements of 19.15.29 NMAC.

B. The person operating or controlling either the release or the location of the release shall notify the division in accordance with 19.15.29 NMAC with respect to a release from a facility of oil or other water contaminant, in such quantity as may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC.

[19.15.29.8 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**19.15.29.9 REPORTING REQUIREMENTS:** The person operating or controlling either the release or the location of the release shall provide notification of releases in 19.15.29.8 NMAC as follows.

A. The person shall report a major release by giving both immediate verbal notice and timely written notice pursuant to Subsections A and B of 19.15.29.10 NMAC.

B. The person shall report a minor release by giving timely written notice pursuant to Subsection B of 19.15.29.10 NMAC. [19.15.29.9 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**19.15.29.10 CONTENTS OF NOTIFICATION:**

A. The person operating or controlling either the release or the location of the release shall provide immediate verbal notification within 24 hours of discovery to the division district office for the area within which the release takes place. In addition, the person shall provide immediate verbal notification of a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC to the division's environmental bureau chief. The notification shall provide the information required on form C-141.

B. The person operating or controlling either the release or the location of the release shall provide timely written notification within 15 days to the division district office for the area within which the release occurs by completing and filing form C-141. In addition, the person shall provide timely written notification of a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC to the division's environmental bureau chief within 15 days after the release is discovered. The written notification shall verify the prior verbal notification and provide appropriate additions or corrections to the information contained in the prior verbal notification.

[19.15.29.10 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**19.15.29.11 CORRECTIVE ACTION:** The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.

[19.15.29.11 NMAC - Rp, 19.15.3.116 NMAC, 12/1/08]

**HISTORY of 19.15.29 NMAC:**

**History of Repealed Material:** 19.15.3 NMAC, Drilling (filed 10/29/2001) repealed 12/1/08.

**NMAC History:**

That applicable portion of 19.15.3 NMAC, Drilling (Section 116) (filed 10/29/2001) was replaced by 19.15.29 NMAC, Release Notification, effective 12/1/08.

**TITLE 19 NATURAL RESOURCES AND WILDLIFE  
CHAPTER 15 OIL AND GAS  
PART 30 REMEDIATION**

**19.15.30.1 ISSUING AGENCY:** Energy, Minerals and Natural Resources Department, Oil Conservation Division.  
[19.15.30.1 NMAC - N, 12/1/08]

**19.15.30.2 SCOPE:** 19.15.30 NMAC applies to persons engaged in oil and gas development and production within New Mexico.  
[19.15.30.2 NMAC - N, 12/1/08]

**19.15.30.3 STATUTORY AUTHORITY:** 19.15.30 NMAC is adopted pursuant to the Oil and Gas Act, NMSA 1978, Sections 70-2-6, 70-2-11 and 70-2-12.  
[19.15.30.3 NMAC - N, 12/1/08]

**19.15.30.4 DURATION:** Permanent.  
[19.15.30.4 NMAC - N, 12/1/08]

**19.15.30.5 EFFECTIVE DATE:** December 1, 2008, unless a later date is cited at the end of a section.  
[19.15.30.5 NMAC - N, 12/1/08]

**19.15.30.6 OBJECTIVE:** To abate pollution of subsurface water so that ground water of the state that has a background concentration of 10,000 mg/l or less TDS is either remediated or protected for use as domestic, industrial and agricultural water supply, and to remediate or protect those segments of surface waters that are gaining because of subsurface-water inflow for uses designated in the water quality standards for interstate and intrastate surface waters in New Mexico, 20.6.4 NMAC; and abate surface-water pollution so that surface waters of the state are remediated or protected for designated or attainable uses as defined in the water quality standards for interstate and intrastate surface waters in New Mexico, 20.6.4 NMAC.

[19.15.30.6 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.7 DEFINITIONS:** [RESERVED]  
[See 19.15.2.7 NMAC for definitions.]

**19.15.30.8 PREVENTION AND ABATEMENT OF WATER POLLUTION:**

**A.** If the background concentration of a water contaminant exceeds the standard or requirement of Subsections A, B or C of 19.15.30.9 NMAC, the responsible person shall abate the pollution to the background concentration.

**B.** The standards and requirements set forth in of Subsections A, B or C of 19.15.30.9 NMAC are not intended as maximum ranges and concentrations for use, and nothing contained in 19.15.30.9 NMAC limits the use of waters containing higher ranges and concentrations.

[19.15.30.8 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.9 ABATEMENT STANDARDS AND REQUIREMENTS:**

**A.** The responsible person shall abate the vadose zone so that water contaminants in the vadose zone will not with reasonable probability contaminate ground water or surface water, in excess of the standards in Subsections B and C of 19.15.30.9 NMAC, through leaching, percolation or other transport mechanisms, or as the water table elevation fluctuates.

**B.** The responsible person shall abate ground-water pollution at a place of withdrawal for present or reasonably foreseeable future use, where the TDS concentration is 10,000 mg/l or less, to conform to the following standards:

- (1) toxic pollutants as defined in 20.6.2.7 NMAC shall not be present; and
- (2) the standards of 20.6.2.3103 NMAC shall be met.

**C.** The responsible person shall abate surface-water pollution to conform to the water quality standards for interstate and intrastate surface waters in New Mexico, 20.6.4 NMAC.

**D.** The division shall not consider subsurface-water and surface-water abatement complete until eight consecutive quarterly samples, or an alternate lesser number of samples the director approves, from the compliance sampling stations the director approved meet the abatement standards in Subsections A, B and C of 19.15.30.9 NMAC. The division shall consider abatement of water contaminants measured in solid-matrix samples of the vadose zone complete after one-time sampling from compliance stations the director approves.

**E. Technical infeasibility.**

(1) If a responsible person is unable to meet the abatement standards set forth in Subsections A and B of 19.15.30.9 NMAC using commercially accepted abatement technology pursuant to an approved abatement plan, the responsible person may propose that abatement standards compliance is technically infeasible.

(a) The director may consider technical infeasibility proposals involving the use of experimental abatement technology.

(b) The responsible person may demonstrate technical infeasibility by a statistically valid extrapolation of the decrease in concentrations of a water contaminant over the remainder of a 20 year period, such that projected future reductions during that time would be less than 20 percent of the concentration at the time the responsible person proposes technical infeasibility. A statistically valid decrease cannot be demonstrated by fewer than eight consecutive quarters.

(c) The technical infeasibility proposal shall include a substitute abatement standard for those contaminants that is technically feasible. The responsible person shall meet abatement standards for other water contaminants not demonstrated to be technically infeasible.

(2) The director shall not approve a proposed technical infeasibility demonstration for a water contaminant if its concentration is greater than 200 percent of the abatement standard for the contaminant.

(3) If the director cannot approve any or all portions of a proposed technical infeasibility demonstration because the water contaminant concentration is greater than 300 percent of the abatement standard for each contaminant, the responsible person may further pursue the issue of technical infeasibility by filing a petition with the division seeking approval of alternate abatement standards pursuant to Subsection F of 19.15.30.9 NMAC.

**F. Alternative abatement standards.**

(1) At any time during or after the stage 2 abatement plan's submission, the responsible person may file a petition seeking approval of alternative abatement standards for the standards set forth in Subsections A and B of 19.15.30.9 NMAC. The division may approve alternative abatement standards if the petitioner demonstrates that:

(a) either compliance with the abatement standards is not feasible, by the maximum use of technology within the responsible person's economic capability; or there is no reasonable relationship between the economic and social costs and benefits, including attainment of the standards set forth in 19.15.30.9 NMAC to be obtained;

(b) the proposed alternative abatement standards are technically achievable and cost-benefit justifiable; and

(c) compliance with the proposed alternative abatement standard will not create a present or future hazard to public health or undue damage to property.

(2) The responsible person shall file a written petition with the division's environmental bureau chief. The petition may include a transport, fate and risk assessment in accordance with accepted methods, and other information as the petitioner deems necessary to support the petition. The petition shall:

(a) state the petitioner's name and address;

(b) state the date of the petition;

(c) describe the facility or activity for which the petitioner seeks the alternate abatement standards;

(d) state the address or description of the property upon which the facility is located;

(e) describe the water body or watercourse the release affected;

(f) identify the abatement standard from which petitioner wishes to vary;

(g) state why the petitioner believes that compliance with 19.15.30 NMAC will impose an unreasonable burden upon the petitioner's activity;

(h) identify the water contaminant for which the petitioner proposes the alternative standard;

(i) state the alternative standard the petitioner proposes;

(j) identify the three-dimensional body of water pollution for which the petitioner seeks approval; and

(k) state the extent to which the abatement standards set forth in 19.15.30.9 NMAC are now, and will in the future be, violated.

(3) The division's environmental bureau chief shall review the petition and, within 60 days after receiving the petition, submit a written recommendation to the director to approve, approve subject to conditions or disapprove any or all of the proposed alternative abatement standards. The recommendation shall include the reasons for the division's environmental

bureau chief's recommendation. The division's environmental bureau chief shall submit a copy of the recommendation to the petitioner by certified mail.

(4) If the division's environmental bureau chief recommends approval, or approval subject to conditions, of any or all of the proposed alternative abatement standards, the division shall hold a public hearing on those standards. If the division's environmental bureau chief recommends disapproval of any or all of the proposed alternative abatement standards, the petitioner may submit a request to the director, within 15 days after the recommendation's receipt, for a public hearing on those standards. If the petitioner does not submit a timely request for hearing, the recommended disapproval shall become a final decision of the director and shall not be subject to review.

(5) If the director grants a public hearing, the division shall conduct the hearing in accordance with division hearing procedures.

(6) Based on the record of the public hearing, the division shall approve, approve subject to condition or disapprove any or all of the proposed alternative abatement standards. The division shall notify the petitioner by certified mail of its decision and the reasons for the decision.

[19.15.30.9 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.10 MODIFICATION OF ABATEMENT STANDARDS:** If applicable abatement standards are modified after the division approves the abatement measures, the abatement standards that are in effect at the time that the division approved the abatement measures shall be the abatement standards for the duration of the abatement action, unless the director determines that compliance with those standards may with reasonable probability create a present or future hazard to public health or the environment. In an appeal of the director's determination that additional actions are necessary, the director shall have the burden of proof.

[19.15.30.10 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.11 ABATEMENT PLAN REQUIRED:**

A. Unless otherwise provided by 19.15.30 NMAC responsible persons who are abating, or who are required to abate, water pollution in excess of the standards and requirements set forth in 19.15.30.9 NMAC shall do so pursuant to an abatement plan the director approves. When the director has approved an abatement plan, the responsible person's actions leading to and including abatement shall be consistent with the abatement plan's terms and conditions.

B. In the event of a transfer of the ownership, control or possession of a facility for which an abatement plan is required or approved, where the transferor is a responsible person, the transferee also shall be considered a responsible person for the abatement plan's duration, and may jointly share the responsibility to conduct the actions 19.15.30 NMAC requires with other responsible persons.

(1) The transferor shall notify the transferee in writing at least 30 days prior to the transfer that the division has required or approved an abatement plan for the facility, and shall deliver or send by certified mail to the director a copy of the notification together with a certificate or other proof that the transferee has received the notification.

(2) The transferor and transferee may agree to a designated responsible person who shall assume the responsibility to conduct the actions 19.15.30 NMAC requires. The responsible persons shall notify the director in writing if a designated responsible person is agreed upon.

(3) If the director determines that the designated responsible person has failed to conduct the actions 19.15.30 NMAC requires, the director shall notify all responsible persons of this failure in writing and allow them 30 days, or longer for good cause shown, to conduct the required actions before setting a show cause hearing requiring those responsible persons to appear and show cause why they should not be ordered to comply, a penalty should not be assessed, a civil action should not be commenced in district court or the division should not take other appropriate action.

C. If the source of the water pollution to be abated is a facility that operated under a discharge plan, the director may require the responsible person to submit a financial assurance plan that covers the estimated costs to conduct the actions the abatement plan requires. Such a financial assurance plan shall be consistent with financial assurance requirements the division adopts.

[19.15.30.11 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.12 EXEMPTIONS FROM ABATEMENT PLAN REQUIREMENT:**

A. Except as provided in Subsection B of 19.15.30.12 NMAC, 19.15.30.11 NMAC and 19.15.30.13 NMAC do not apply to a person who is abating water pollution:

- (1) from an underground storage tank, under the authority of the New Mexico environmental improvement board's underground storage tank rules, 20.5 NMAC, or in accordance with the Ground Water Protection Act, NMSA 1978, Section 74-6B-1 *et seq.*;
- (2) under the EPA's authority pursuant to either the Federal Comprehensive Environmental Response, Compensation and Liability Act, and amendments, or RCRA;
- (3) pursuant to the New Mexico environmental improvement board's hazardous waste management rule, 20.4.1 NMAC;
- (4) under the authority of the United States nuclear regulatory commission or the United States department of energy pursuant to the Atomic Energy Act;
- (5) under the authority of a ground-water discharge plan the director approved, provided that such abatement is consistent with the requirements and provisions of 19.15.30.8 NMAC, 19.15.30.9 NMAC, Subsections C and D of 19.15.30.13 NMAC, 19.15.30.14 NMAC and 19.15.30.19 NMAC;
- (6) under the authority of a letter of understanding, settlement agreement or administrative order on consent or other agreement signed by the director or director's designee prior to March 15, 1997, provided that abatement is being performed in compliance with the terms of the letter of understanding, settlement agreement or administrative order or other agreement on consent; and
- (7) on an emergency basis, or while abatement plan approval is pending, or in a manner that will likely result in compliance with the standards and requirements set forth in 19.15.30.9 NMAC within one year after notice is required to be given pursuant to 19.15.29.9 NMAC provided that the division does not object to the abatement action.

**B.** If the director determines that abatement of water pollution subject to Subsection A of 19.15.30.12 NMAC will not meet the standards of Subsections B and C of 19.15.30.9 NMAC, or that additional action is necessary to protect health, welfare, environment or property, the director may notify a responsible person, by certified mail, to submit an abatement plan pursuant to 19.15.30.11 NMAC and Subsection A of 19.15.30.14 NMAC. The notification shall state the reasons for the director's determination. In an appeal of the director's determination under Subsection B of 19.15.30.12 NMAC, the director shall have the burden of proof.

[19.15.30.12 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

#### **19.15.30.13 ABATEMENT PLAN PROPOSAL:**

**A.** Except as provided for in 19.15.30.12 NMAC a responsible person shall, within 60 days of receipt of the director's written notice that the division requires an abatement plan, submit an abatement plan proposal to the director for approval. The responsible person may submit stage 1 and stage 2 abatement plan proposals together. For good cause shown, the director may allow for a total of 120 days to prepare and submit the abatement plan proposal.

#### **B. Voluntary abatement.**

(1) A person wishing to abate water pollution in excess of the standards and requirements set forth in 19.15.30.9 NMAC may submit a stage 1 abatement plan proposal to the director for approval. Following the director's approval of a final site investigation report prepared pursuant to stage 1 of an abatement plan, a person may submit a stage 2 abatement plan proposal to the director for approval.

(2) Following approval of a stage 1 or stage 2 abatement plan proposal under Paragraph (1) of Subsection B of 19.15.30.13 NMAC the person submitting the approved plan shall be a responsible person under 19.15.30 NMAC for the purpose of performing the approved stage 1 or stage 2 abatement plan. Nothing in 19.15.30 NMAC precludes the director from applying 19.15.29.11 NMAC to a responsible person if applicable.

**C. Stage 1 abatement plan.** The stage 1 of the abatement plan's purpose is to design and conduct a site investigation that adequately defines site conditions, and provide the data necessary to select and design an effective abatement option. Stage 1 of the abatement plan may include the following information depending on the media affected, and as needed to select and implement an expeditious abatement option:

- (1) descriptions of the site, including a site map, and of site history including the nature of the release that caused the water pollution, and a summary of previous investigations;
- (2) site investigation work plan that defines:
  - (a) site geology and hydrogeology; the vertical and horizontal extent and magnitude of vadose-zone and ground-water contamination; subsurface hydraulic conductivity; transmissivity, storability and rate and direction of contaminant migration; inventory of water wells inside and within one mile from the perimeter of the three-dimensional body where the standards set forth in Subsection C of 19.15.30.9 NMAC are exceeded; and location and number of wells the pollution actually or potentially affects; and

- (b) surface water hydrology, seasonal stream flow characteristics, ground water/surface water relationships, the vertical and horizontal extent and magnitude of contamination and impacts to surface water and stream sediments; the magnitude of contamination and impacts on surface water may be, in part, defined by conducting a biological assessment of fish, benthic macro invertebrates and other wildlife populations; seasonal variations should be accounted for when conducting these assessments;
- (3) monitoring program, including sampling stations and frequencies, for the abatement plan's duration that may be modified, after the director's approval, as the responsible person creates additional sampling stations;
- (4) quality assurance plan, consistent with the sampling and analytical techniques listed in Subsection B of 20.6.2.3107 NMAC and with 20.6.4.14 NMAC of the water quality standards for interstate and intrastate surface waters in New Mexico, for all work to be conducted pursuant to the abatement plan;
- (5) a schedule for stage 1 abatement plan activities, including the submission of summary quarterly progress reports, and the submission, for the director's approval, of a detailed final site investigation report; and
- (6) additional information that may be required to design and perform an adequate site investigation.

**D. Stage 2 abatement plan.**

(1) A responsible person shall submit a stage 2 abatement plan proposal to the director for approval within 60 days, or up to 120 days for good cause shown, after the director's approval of the final site investigation report prepared pursuant to stage 1 of the abatement plan. The responsible person may submit a stage 1 and 2 abatement plan proposal together. Stage 2 of the abatement plan's purpose is to select and design, if necessary, an abatement option that, when implemented, results in attainment of the abatement standards and requirements set forth in 19.15.30.9 NMAC, including post-closure maintenance activities.

(2) Stage 2 of the abatement plan should include, at a minimum, the following information:

- (a) a brief description of the current situation at the site;
- (b) development and assessment of abatement options;
- (c) a description, justification and design, if necessary, of the preferred abatement option;
- (d) modification, if necessary, of the monitoring program the director approved pursuant to stage 1 of the abatement plan, including the designation of pre- and post-abatement-completion sampling stations and sampling frequencies to be used to demonstrate compliance with the standards and requirements set forth in 19.15.30.9 NMAC;
- (e) site maintenance activities, if needed, the responsible person proposes to perform after abatement activities terminate;
- (f) a schedule for the duration of abatement activities, including the submission of summary quarterly progress reports;
- (g) a public notification proposal designed to satisfy the requirements of Subsections B and C of 19.15.30.15 NMAC; and
- (h) additional information that may be reasonably required to select, describe, justify and design an effective abatement option.

[19.15.30.13 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.14 OTHER REQUIREMENTS:**

**A.** A responsible person shall allow the director's authorized representative upon presentation of proper credentials and with reasonable prior notice to:

- (1) enter the facility at reasonable times;
- (2) inspect and copy records an abatement plan requires;
- (3) inspect treatment works, monitoring and analytical equipment;
- (4) sample wastes, ground water, surface water, stream sediment, plants, animals or vadose-zone material including vadose-zone vapor;
- (5) use monitoring systems and wells under the responsible person's control in order to collect samples of media listed in Paragraph (4) of Subsection A of 19.15.30.14 NMAC; and
- (6) gain access to off-site property the responsible person does not own or control, but is accessible to the responsible person through a third-party access agreement, provided that the agreement allows it.

**B.** A responsible person shall provide the director, or director's representative, with at least four working days advance notice of sampling to be performed pursuant to an abatement plan, or a well plugging, abandonment or destruction at a facility where the division has required an abatement plan.

C. A responsible person wishing to plug, abandon or destroy a monitoring or water supply well within the perimeter of the three dimensional body where the standards set forth in Subsection B of 19.15.30.9 NMAC are exceeded, at a facility where the division has required an abatement plan, shall propose such action by certified mail to the director for approval, unless the state engineer's approval is required. The responsible person shall design the proposed action to prevent water pollution that could result from water contaminants migrating through the well or bore hole. The proposed action shall not take place without the director's written approval, unless the responsible person does not receive written approval or disapproval within 30 days after the date the director receives the proposal.

[19.15.30.14 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.15 PUBLIC NOTICE AND PARTICIPATION:**

A. Prior to public notice, the applicant shall give written notice, as approved by the division, of stage 1 and stage 2 abatement plans to the following persons:

- (1) surface owners of record within one mile of the perimeter of the geographic area where the standards and requirements set forth in 19.15.30.9 NMAC are exceeded;
- (2) the county commission where the geographic area where the standards and requirements set forth in 19.15.30.9 NMAC are exceeded is located;
- (3) the appropriate city officials if the geographic area where the standards and requirements set forth in 19.15.30.9 NMAC are exceeded is located or is partially located within city limits or within one mile of the city limits;
- (4) those persons, the director identifies, who have requested notification, who shall be notified by mail; (5) the New Mexico trustee for natural resources, and other local, state or federal governmental agencies affected, as the director identifies, which shall be notified by certified mail;
- (6) the governor or president of a tribe, pueblo or nation if the geographic area where the standards and requirements set forth in 19.15.30.9 NMAC are exceeded is located or is partially located within tribal boundaries or within one mile of the tribal boundaries, who shall be notified by certified mail;
- (7) the director may extend the distance requirements for notice if the director determines the proposed abatement plan has the potential to adversely impact public health or the environment at a distance greater than one mile. The director may require additional notice as needed. The applicant shall furnish a copy and proof of the notice to the division.

B. Within 15 days after the division determines that a stage 1 abatement plan or a stage 2 abatement plan is administratively complete, the responsible person shall issue public notice in a division-approved form in a newspaper of general circulation in the county in which the release occurred, and in a newspaper of general circulation in the state. For the purposes of Subsection B of 19.15.30.15 NMAC, an administratively complete stage 1 abatement plan is a document that satisfies the requirements of Subsection C of 19.15.30.13 NMAC and an administratively complete stage 2 abatement plan is a document that satisfies the requirements of Paragraph (2) of Subsection D of 19.15.30.13 NMAC. The public notice shall include, as approved in advance by the director:

- (1) the responsible person's name and address;
- (2) the location of the proposed abatement;
- (3) a brief description of the source, extent and estimated volume of release; whether the release occurred into the vadose zone, ground water or surface water; and a description of the proposed stage 1 or stage 2 abatement plan;
- (4) a brief description of the procedures the director followed in making a final determination;
- (5) a statement that the public may view a copy of the abatement plan at the division's Santa Fe office or at the division's district office for the area in which the release occurred, and a statement describing how the public can access the abatement plan electronically from a division-maintained site if such access is available;
- (6) a statement that the division will accept the following comments and requests for consideration if the director receives them within 30 days after the date of publication of the public notice:
  - (a) written comments on the abatement plan; and
  - (b) for a stage 2 abatement plan, written requests for a public hearing that include reasons why a hearing should be held; and
- (7) an address and phone number at which interested persons may obtain further information.

C. A person seeking to comment on a stage 1 abatement plan, or to comment or request a public hearing on a stage 2 abatement plan, shall file written comments or hearing requests with the division within 30 days after the date of public notice, or within 30 days after the director receives a proposed significant modification of a stage 2 abatement plan. Requests for a public hearing shall set forth the reasons why a hearing should be held. The division shall hold a public hearing if the director determines that there is significant public interest or that the request has technical merit.

D. The division shall distribute notice of an abatement plan's filing with the next division and commission hearing docket following the plan's receipt.

[19.15.30.15 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.16 DIRECTOR APPROVAL OR NOTICE OF DEFICIENCY OF SUBMITTALS:**

A. The director shall, within 60 days after receiving an administratively complete stage 1 abatement plan, a site investigation report, a technical infeasibility demonstration or an abatement completion report approve the document, or notify the responsible person of the document's deficiency, based upon the information available.

B. If the division does not hold a public hearing pursuant to Subsection C of 19.15.30.15 NMAC then the director shall, within 90 days after receiving a stage 2 abatement plan proposal, approve the plan, or notify the responsible person of the plan's deficiency, based upon the information available.

C. If the division holds a public hearing pursuant to Subsection C of 19.15.30.15 NMAC then the director shall, within 60 days after receiving the required information, approve stage 2 of the abatement plan proposal, or notify the responsible person of the plan's deficiency, based upon the information contained in the plan and the information submitted at the hearing.

D. If the director notifies a responsible person of a deficiency in a site investigation report, or in a stage 1 or stage 2 abatement plan proposal, the responsible person shall submit a modified document to cure the deficiencies the director specifies within 30 days after receiving the notice of deficiency. The responsible person is in violation of 19.15.30 NMAC if the responsible person fails to submit a modified document within the required time, or if the responsible person does not in the modified document make a good faith effort to cure the deficiencies the director specified.

E. Provided that the responsible person meets the other requirements of 19.15.30 NMAC and provided further that stage 2 of the abatement plan, if implemented, shall result in the standards and requirements set forth in 19.15.30.9 NMAC being met within a schedule that is reasonable given the site's particular circumstances, the director shall approve the plan.

[19.15.30.16 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.17 INVESTIGATION AND ABATEMENT:** A responsible person who receives the division's approval for stage 1 or stage 2 of an abatement plan shall conduct investigation, abatement, monitoring and reporting activities in compliance with 19.15.30 NMAC and according to the terms and schedules contained in the approved abatement plans.

[19.15.30.17 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.18 ABATEMENT PLAN MODIFICATION:**

A. The division may modify an approved abatement plan at the responsible person's written request in accordance with 19.15.30 NMAC with the director's written approval.

B. If data the responsible person submitted pursuant to monitoring requirements specified in the approved abatement plan or other information available to the director indicates that the abatement action is ineffective, or is creating unreasonable injury to or interference with health, welfare, environment or property, the director may require a responsible person to modify an abatement plan within the shortest reasonable time so as to effectively abate water pollution that exceeds the standards and requirements set forth in 19.15.30.9 NMAC, and to abate and prevent unreasonable injury to or interference with health, welfare, environment or property.

[19.15.30.18 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.19 COMPLETION AND TERMINATION:**

A. The division shall consider abatement complete when the responsible person meets the standards and requirements set forth in 19.15.30.9 NMAC. At that time, the responsible person shall submit an abatement completion report, documenting compliance with the standards and requirements set forth in 19.15.30.9 NMAC, to the director for approval. The abatement completion report also shall propose changes to long term monitoring and site maintenance activities, if needed, to be performed after the abatement plan's termination.

B. Provided that the responsible person meets the other requirements of 19.15.30 NMAC and provided further that the responsible person has met the standards and requirements set forth in 19.15.30.9 NMAC, the director shall approve the

abatement completion report. When the director approves the abatement completion report, the director shall also notify the responsible person in writing that the abatement plan is terminated.

[19.15.30.19 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.20 DISPUTE RESOLUTION:** In the event of a technical dispute regarding the requirements of 19.15.29 NMAC, 19.15.30.9 NMAC, 19.15.30.12 NMAC, 19.15.30.13 NMAC, 19.15.30.18 NMAC or 19.15.30.19 NMAC, including notices of deficiency, the responsible person may notify the director by certified mail that a dispute has arisen, and the responsible person desires to invoke the dispute resolution provisions of 19.15.30.20 NMAC provided that the responsible person shall send the notification within 30 days after the responsible person receives the director's decision that causes the dispute. Upon the notification, the deadlines affected by the technical dispute shall be extended for a 30 day negotiation period, or for a maximum of 60 days if approved by the director for good cause shown. During this negotiation period, the director or the director's designee and the responsible person shall meet at least once. A mutually agreed upon third party may facilitate the meeting, but the third party shall assume no power or authority granted or delegated to the director by the Oil and Gas Act or by the division or commission. If the dispute remains unresolved after the negotiation period, the director's decision shall be final.

[19.15.30.20 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**19.15.30.21 APPEALS FROM DIRECTOR'S AND DIVISION'S DECISIONS:**

A. If the director

(1) determines that an abatement plan is required pursuant to 19.15.29.11 NMAC;

(2) approves or provides notice of deficiency of a proposed abatement plan, technical infeasibility demonstration or abatement completion report; or

(3) modifies or terminates an approved abatement plan the director shall provide written notice of the action by certified mail to the responsible person and other persons who participated in the action.

B. A person who participated in the action before the director and that the action listed in Subsection A of 19.15.30.21 NMAC adversely affects may file a petition requesting a hearing before a division examiner.

C. The person shall make the petition in writing and file it with the division within 30 days after receiving notice of the director's action. The petition shall specify the portions of the action to which the petitioner objects, certify that the person has mailed or hand-delivered a copy of the petition to the director and to the applicant or permittee if the petitioner is not the applicant or permittee and have attached a copy of the action for which the person seeks review. Unless a person makes a timely petition for hearing, the director's action is final.

D. The hearing before the division shall be conducted in the same manner as other division hearings.

E. The petitioner shall pay the cost of the court reporter for the hearing.

F. A party adversely affected by a division order pursuant to a hearing held by a division examiner, shall have a right to have the matter heard de novo before the commission.

G. The appeal provisions do not relieve the owner, operator or responsible person of their obligations to comply with federal or state laws including regulations or rules.

[19.15.30.21 NMAC - Rp, 19.15.1.19 NMAC, 12/1/08]

**HISTORY of 19.15.30 NMAC:**

**History of Repealed Material:** 19.15.1 NMAC, General Provisions and Definitions (filed 04/27/2001) repealed 12/1/08.

**NMAC History:** That applicable portion of 19.15.1 NMAC, General Provisions and Definitions (Section 19) (filed 04/27/2001) was replaced by 19.15.30 NMAC, Remediation, effective 12/1/08.

*modification requested.*

**Lowe, Leonard, EMNRD**

---

**From:** Weaver, Eric [Eric.Weaver@anadarko.com]  
**Sent:** Wednesday, June 30, 2010 8:23 AM  
**To:** Lowe, Leonard, EMNRD  
**Cc:** McEvers, Kent; Betik, Julie  
**Subject:** San Juan River Gas Plant AGI Well and GW-033 Permit Modification  
**Attachments:** SJRGP FacSummary\_R2.pdf

Leonard,

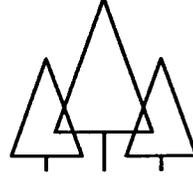
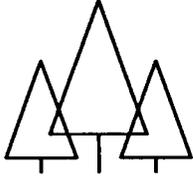
Pursuant to our previous conversations regarding the modification of Discharge Permit GW-033 with the installation of the AGI well and system, I have attached a pdf document that should contain all the information requested. Please review and let me know if there is any additional documents or information needed to modify the existing GW-033 permit. Also, are you going to require a hard copy of the attachment? If so I can submit one when I send in the \$100 filing fee and the major modification facility fee of \$2000. Do we need to submit these as to separate checks or will one check to your attention be sufficient? Please keep us posted as to the progress and how we need to proceed with this permit modification from here. Thank you for your assistance.

Best regards.

<<SJRGP FacSummary\_R2.pdf>>

*Eric W. Weaver*  
Anadarko Petroleum  
Sr. Environmental Analyst  
Midland, Texas  
Office 432-684-2808  
Cell 432-413-2494

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# San Juan River Gas Plant

## Facility Summary

March 2010

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## 1.0 San Juan River Plant

**Facilities:** The San Juan River Plant

**Location:** The San Juan River Plant (SJRP) is located in Kirtland, New Mexico, 13 miles west of Farmington in San Juan County, New Mexico.

**Process:** This facility receives gas from producers located in the Four Corners Region of New Mexico, Arizona, Utah and Colorado for treating and processing. Process equipment includes a 20 MMcfd cryogenic skid, Amine Plant, Sulfur Recovery Plant and related inlet and residue compression. At the SJRP, the gas is treated for the removal of carbon dioxide and hydrogen sulfide. Acid gas is routed through a Claus sulfur recovery unit with any remaining H<sub>2</sub>S sent to an incinerator. The treated gas is then processed and recompressed for delivery to the residue pipeline outlet of El Paso Natural Gas Company. The cryogenic liquid stream extracted from the Four Corners and Aneth Gathering System's gas is delivered to the Enterprise MAPL for transportation and fractionation. Sour liquid handling and stabilization facilities were added in 2002 to handle the wet gas from the Aneth field.

**Proposed**

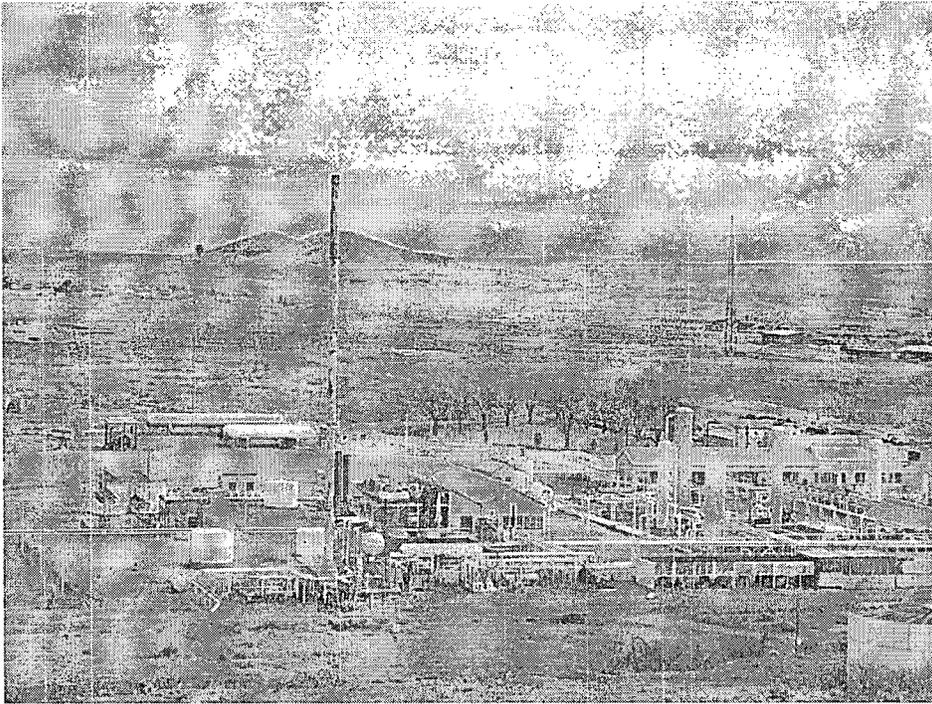
**Process:** Acid gas will be sequestered in an acid gas injection well, Pathfinder AGI #1. The sulfur recovery unit will be shut down. All other plant facilities and processes will remain the same.

**Capacities:** The combined capacity of the SJRP is 60 MMcfd.

**Current Flow Rates:**

Current plant inlet volumes are approximately 30 MMcfd with liquid recoveries of 49,000 gallons per day. With the injection of acid gas, proposed gas volumes through the plant are 50 MMscfd.

**Staffing:** The plant is staffed 24 hours per day with a lead operator and operator on shift. Total staffing for the plant and field operations includes 21 employees.



## 2.0 Process Overview

### **Barker Dome System**

The Barker Dome gas enters the plant at app. 325 psig. The gas comes primarily from wells operated by Conoco/Burlington, XTO Energy and Huntington Energy. The gas is sour and contains an average of 3500 ppm H<sub>2</sub>S and approximately 4% CO<sub>2</sub>. The gas does have condensate and water that is taken out by pigging the lines every other week. There are no other liquids recovered from this gas. The gas enters the inlet receivers where any associated liquids are dropped out first in the sludge catcher then a large scrubber before entering the plant. The gas then flows through the Barker Dome inlet scrubber. Here any remaining liquids are recovered and routed to a 100K gallon tank on the Aneth inlet. The gas then flows to the amine contactor "B" where H<sub>2</sub>S and CO<sub>2</sub> are removed from the gas stream. The treated gas is then routed to a scrubber prior to compression and routing to the glycol contactor where the gas is dried to pipeline specifications before being routed on to the sales pipeline. Condensate is transferred to an atmospheric tank before being truck loaded to sales. Produced water recovered is sent to an atmospheric tank and then on to the evaporation pond.

### **Aneth System**

This gas comes from a large gathering system that extends into Utah. The gas is wet and contains app. 2500 to 3500 ppm of H<sub>2</sub>S and has an average CO<sub>2</sub> of app. 1%. Pigging operations of this pipeline remove condensed liquids from the gas. The gas enters the system through the same inlet receivers as the Barker Dome gas. Any condensate captured from the Aneth system is sent to the stabilizer system and then held in pressurized tanks before being truck loaded to sales. Produced water that has been separated from the condensate is routed to a produced water storage tank and later to the evaporation pond. Inlet gas is compressed from app. 125 psig to 350 psig. The gas is then sent to the Amine contactor "A" where H<sub>2</sub>S and CO<sub>2</sub> are removed from the gas stream. The sweet gas then goes through the carry-over separator which will pick up any amine that is brought over with the gas. The sweet gas is then compressed before being routed to the glycol contact tower for dehydration. The gas then moves to the liquid recovery part of the plant where NGLs are extracted. The NGLs are pipelined to sales from the plant. Residue gas is then compressed and delivered to the sales pipeline.

### **Acid Gas and Sulfur Recovery Unit**

The gas at San Juan contains both hydrogen sulfide (H<sub>2</sub>S) and carbon dioxide (CO<sub>2</sub>). The amine treating process removes these constituents from the gas stream and the remaining CO<sub>2</sub> and H<sub>2</sub>S is called acid gas. The acid gas is currently routed to the sulfur recovery unit (SRU).

The San Juan River Gas Plant uses the Claus process to recover elemental sulfur from the acid gas stream. The acid gas stream is currently 90-94% CO<sub>2</sub> and 6-10% H<sub>2</sub>S. Utilizing a multi-step process, sulfur is recovered through both thermal and catalytic processes that used in conjunction increase sulfur yield. Any H<sub>2</sub>S that is not converted in the SRU is sent to the incinerator to be combusted to SO<sub>2</sub>. Sulfur is stored in a heated pit until trucked out to sales.

**Proposed changes to system with the introduction of AGI (acid gas injection).**

The acid gas from the amine treater will be routed to compression for down-hole injection and sequestration rather than going to the sulfur recovery unit. An approved C-108 allows acid gas injection into the Entrada formation. The details of this program are available online on the OCD website for our C-108.

**Benefits to the discharge plan by going forward with this project.**

1. Shutting down and removal of the sulfur recovery unit. This will eliminate the potential discharge of sulfur and sulfur byproducts.
2. There will be no more steam, steam condensers and blow-down from the many heat exchangers that are associated with an SRU.
3. There will be no emissions from the incinerator unless we are in a scheduled, routine or emergency maintenance of the acid gas injection equipment.
4. We will be able to stop hauling molten sulfur to our rail-site in Gallup New Mexico over some of the busiest roads in the state.
5. We will be able to close down our rail-site and car/sulfur storage along one of the busiest railroads in the country. This will also enable us to stop rail car loading and moving onto the main rail system.
6. This project will also reduce air quality emissions of CO<sub>2</sub> and SO<sub>2</sub> and safely sequester those gases into a trapped zone (see C-108 application).

**Project Impacts**

1. A new cooling tower will be installed to control the inlet and inter-stage temperatures of the AGI compression. This will require periodic blow-downs to the evaporation pond. Estimated volumes are 10 bbls per event.
2. Three (3) 450 hp acid gas injection compressors will be installed. Skid drainage will be to OCD specifications.
3. For scheduled maintenance and emergency events, acid gas will be routed to the flare or incinerator destruction/combustion.

DISTRICT I  
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, N.M. 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, N.M. 87505

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number	<sup>2</sup> Pool Code	<sup>3</sup> Pool Name
<sup>4</sup> Property Code	<sup>5</sup> Property Name <b>AGI WELL</b>	
<sup>7</sup> OGRID No.	<sup>8</sup> Operator Name <b>WESTERN GAS RESOURCES</b>	<sup>6</sup> Well Number
		<sup>9</sup> Elevation <b>5304</b>

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	I	29 N	15 W		1650	NORTH	2260	WEST	SAN JUAN

<sup>11</sup> Bottom Hole Location If Different From Surface

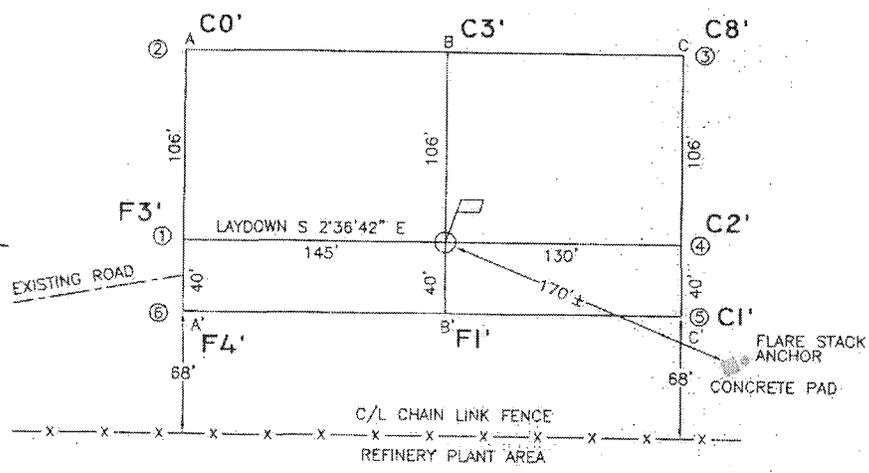
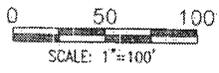
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<sup>16</sup> S 88°51'34" W 2644.53' 2401.14' LOT 4 (40.56) N 0°16'56" E 2260' 2639.32' N 0°17'16" E N 87°28'32" W 2621.80'	1650' LOT 3 (40.40)	N 88°52'39" E 2624.99' LOT 2 (40.84) LAT: 36.7587392° N LONG: 108.3698700° W NAD 85 LAT: 36.7587378° N LONG: 108.3692353° W NAD 27 SECTION I	LOT 1 (40.08)	<sup>17</sup> OPERATOR CERTIFICATION	
				<i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i>	
				Signature	Date
				Printed Name	
				<sup>18</sup> SURVEYOR CERTIFICATION	
				<i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i>	
				4/02/10 Date of Survey	
				Signature and Seal of Professional Surveyor:	
				Certificate Number	

BEFORE DIGGING  
CALL FOR UTILITY  
LINE LOCATION!



A-A' E

5320				
5310				
5300				
5290				
5280				

B-B' E

5320				
5310				
5300				
5290				
5280				

C-C' E

5320				
5310				
5300				
5290				
5280				

CROSS SECTIONS  
HORIZONTAL: 1"=100'  
VERTICAL: 1"=50'

LEASE: AGI WELL

FOOTAGE: 1650' FNL, 2260' FWL

SEC. I TWN. 29 N RNG. 15 W N.M.P.M.

LAT: N 36.7587392° LONG: W 108.3698700° (NAD 83)

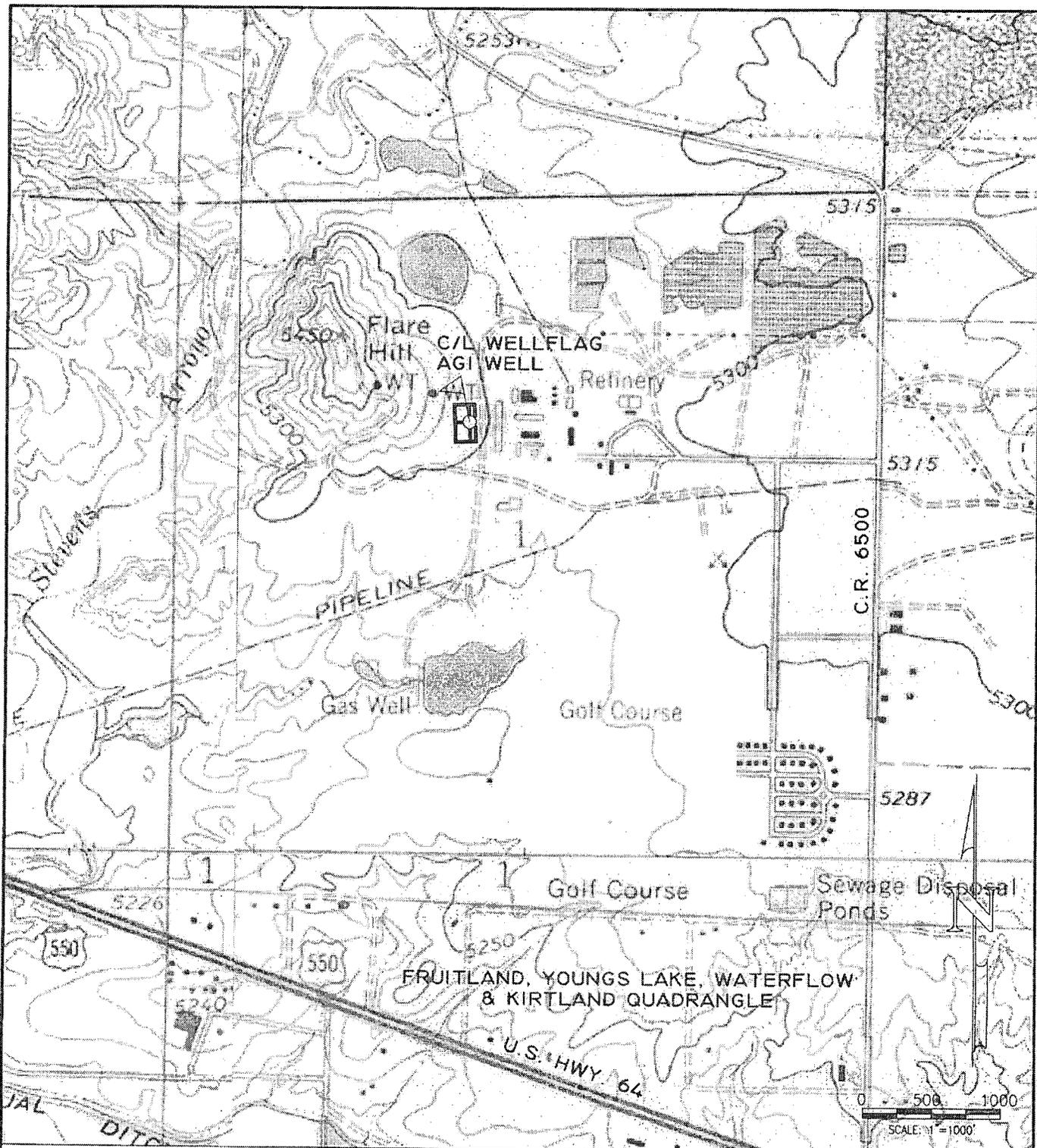
ELEVATION: 5304

**WESTERN GAS RESOURCES**  
DENVER, COLORADO



P.O. BOX 3651  
FARMINGTON, NM 87499  
OFFICE: (505) 334-0408

DWG. NO. : 9603C01	REVISION: 1
DRAWN BY: H.S.	DATE DRAWN: 4/05/10
SURVEYED: 4/02/10	APP. BY: M.W.L.
	REV. DATE:
	SHEET: 1



LEASE: AGI WELL

FOOTAGE: 1650' FNL, 2260' FWL

SEC. 1    TWN. 29 N    RNG. 15 W    N.M.P.M.

LAT: N 36.7587392° LONG: W 108.3698700° (NAD 83)

ELEVATION: 5304

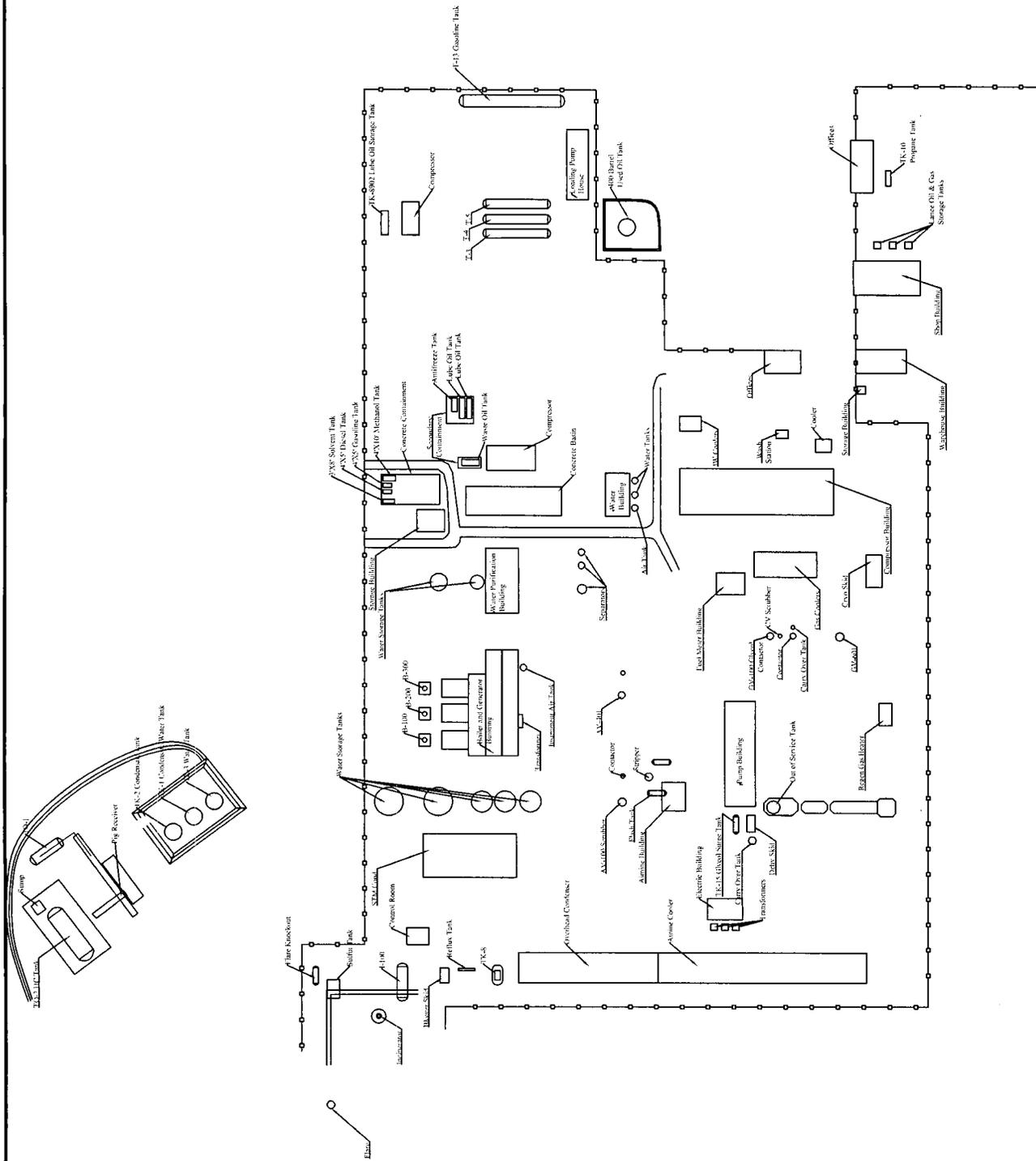
**WESTERN GAS RESOURCES**  
DENVER, COLORADO



**UNITED**  
FIELD SERVICES INC.

P.O. BOX 3651  
FARMINGTON, NM 87499  
OFFICE: (505) 334-0408

DWG. NO. : 9603T01	REVISION: 1	
DRAWN BY: H.S.	DATE DRAWN: 4/05/10	REV. DATE:
SURVEYED: 4/02/10	APP. BY: M.W.L.	SHEET: 1







**Anadarko**  
Petroleum Corporation  
SUN JAN RIVER PLANT  
PIPELINE WELLS HEAD  
DRAWING NUMBER: SJ-PID-1401  
DATE: 7/8/09

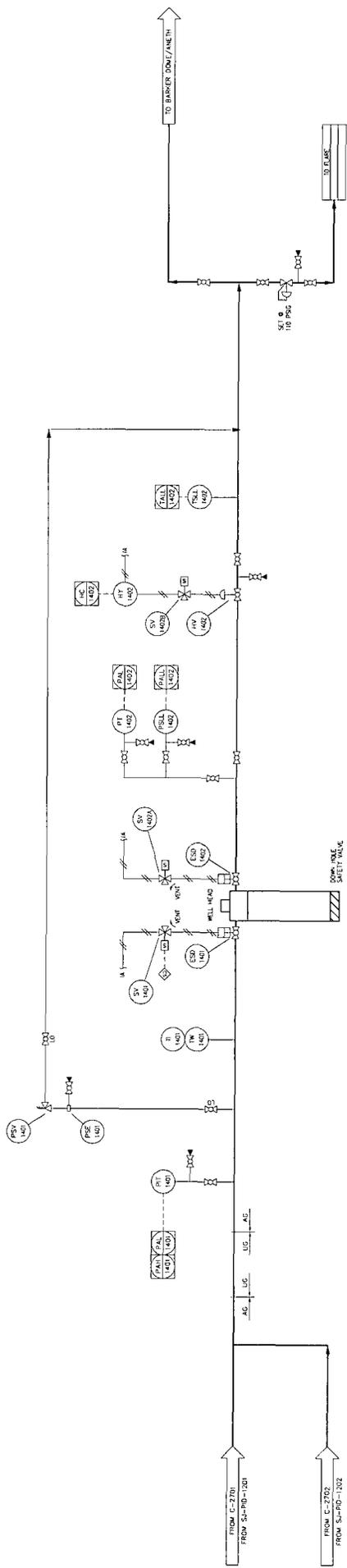
NO.	REVISIONS	DATE
1	ISSUED FOR PERMITS	7/8/09
2	REVISED PERMITS	7/13/09
3	REVISED PERMITS	7/28/09

NO.	REFERENCE DRAWINGS
1	SUN JAN RIVER PLANT PIPING AND WELLS HEAD
2	SUN JAN RIVER PLANT PIPING AND WELLS HEAD
3	SUN JAN RIVER PLANT PIPING AND WELLS HEAD

NO.	REVISIONS	DATE
1	ISSUED FOR PERMITS	7/8/09
2	REVISED PERMITS	7/13/09
3	REVISED PERMITS	7/28/09

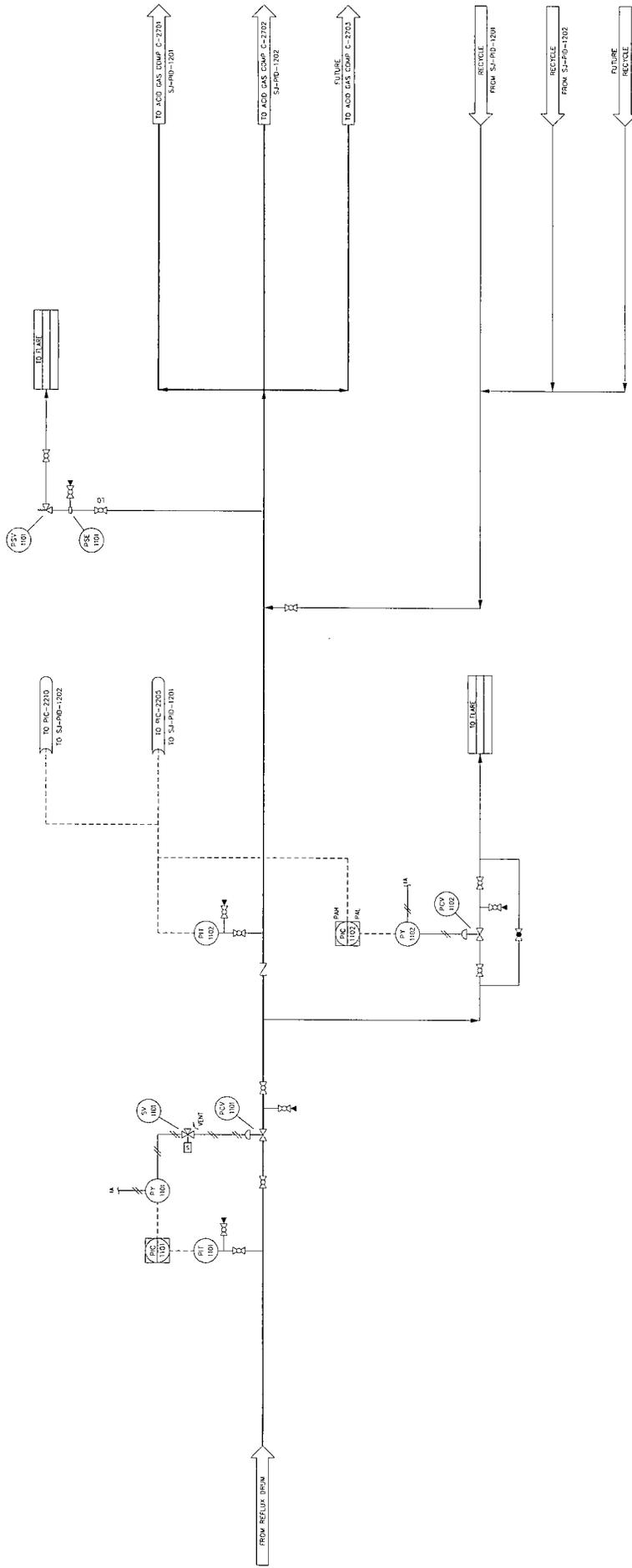
**KARUNA VENTURES** LLC  
1600 W. 10TH AVE. SUITE 200  
DENVER, CO 80202  
303-491-7374

**GWD DESIGN** INC.  
6711 17th St., Suite 200B, Denver, CO 80202-3200









**Anadarko**  
 Petroleum Corporation  
 SAN JUAN RIVER PLANT  
 PIPING AND INSTRUMENTATION DRAWING

REV	DATE	BY	CHKD	PK	DATE
1	7/1/09				
2	7/1/09				
3	7/1/09				

NO	REVISIONS
1	
2	
3	

**KARINA VENTURES LLC**  
 WESTMINSTER, CO 80021  
 303-451-7374

**GWD DESIGN**  
 8517th St, Suite 202, Denver, CO 80231-4206

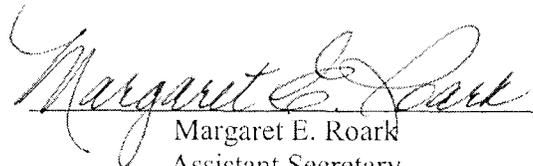
DATE	BY	CHKD	PK
7/1/09			
7/1/09			
7/1/09			

**WGR ASSET HOLDING COMPANY LLC  
ASSISTANT SECRETARY'S CERTIFICATE**

I, Margaret E. Roark, do hereby certify that I am a duly elected, qualified and acting Assistant Secretary of WGR Asset Holding Company LLC, a Delaware limited liability company (the "Company") and that, as such, have authority to certify the following on behalf of the Company:

1. Attached hereto as Exhibit A is a list of officers of the Company from the date of its formation through the date of this certificate; and
2. Attached hereto as Exhibit B is an organizational chart depicting the assets held both directly and indirectly by the Company as of the date hereof.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Company this 7<sup>th</sup> day of June 2010.

  
Margaret E. Roark  
Assistant Secretary



**EXHIBIT A**

# Directors/Officers Report

From 01/01/2007 to 06/07/2010

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## WGR Asset Holding Company LLC

### Officers

#### Robert G. Gwin

*President and Chief Executive Officer*

First Elected: 06/19/2007      End Date: 08/28/2008

#### R. A. Walker

*President*

First Elected: 05/01/2009      End Date:

#### Robert G. Gwin

*Senior Vice President and Chief Financial Officer*

First Elected: 05/01/2009      End Date:

#### Robert K. Reeves

*Senior Vice President*

First Elected: 08/28/2008      End Date:

#### R. A. Walker

*Senior Vice President, Finance*

First Elected: 08/28/2008      End Date: 05/01/2009

#### Robert D. Abendschein

*Vice President*

First Elected: 08/28/2008      End Date:

#### Larry J. Abston

*Vice President, Internal Audit*

First Elected: 05/01/2009      End Date:

**WGR Asset Holding Company LLC**

**D. Clay Bretches**

*Vice President*

First Elected: 08/28/2008      End Date: 05/01/2009

**Bruce W. Busmire**

*Vice President and Treasurer*

First Elected: 08/28/2008      End Date:

**Mario M. Coll**

*Vice President*

First Elected: 08/28/2008      End Date:

**Margaret C. Douglas**

*Vice President and Chief Accounting Officer*

First Elected: 05/01/2009      End Date:

**Katie Jackson**

*Vice President*

First Elected: 05/01/2009      End Date:

**David D. Keanini**

*Vice President*

First Elected: 03/26/2009      End Date: 03/27/2010

**James J. Kleckner**

*Vice President*

First Elected: 08/28/2008      End Date:

**WGR Asset Holding Company LLC**

**Gregory M. Pensabene**

*Vice President*

First Elected: 08/28/2008 End Date: 05/01/2009

**Danny J. Rea**

*Vice President, Midstream*

First Elected: 08/28/2008 End Date: 05/01/2009

*Vice President*

First Elected: 05/01/2009 End Date:

**Albert L. Richey**

*Vice President, Corporate Development*

First Elected: 08/28/2008 End Date: 05/01/2009

**Michael M. Ross**

*Vice President*

First Elected: 03/26/2009 End Date:

**David L. Siddall**

*Vice President and Corporate Secretary*

First Elected: 05/01/2009 End Date:

**Stuart C. Strife**

*Vice President*

First Elected: 08/28/2008 End Date: 05/01/2009

**Edward L. Wood**

*Vice President*

First Elected: 05/01/2009 End Date:

# Directors/Officers Report

From 01/01/2007 to 06/07/2010

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## WGR Asset Holding Company LLC

**Margaret C. Douglas**

*Controller*

First Elected: 06/19/2007      End Date: 05/01/2009

**Michael C. Pearl**

*Controller*

First Elected: 05/01/2009      End Date:

**Ronald D. Buehner**

*Assistant Controller & Tax Officer*

First Elected: 05/01/2009      End Date:

**Michael R. Cieslak**

*Assistant Controller*

First Elected: 05/01/2009      End Date:

**John R. Crouch**

*Assistant Controller*

First Elected: 05/01/2009      End Date:

**Michael S. Lagunas**

*Assistant Controller*

First Elected: 02/25/2010      End Date:

**Robbie L. Lewis**

*Assistant Controller & Tax Officer*

First Elected: 03/04/2010      End Date:

**WGR Asset Holding Company LLC**

**Deborah K. Murphy**

*Assistant Controller*

First Elected: 02/25/2010 End Date:

*Assistant Controller & Tax Officer*

First Elected: 05/01/2009 End Date: 02/25/2010

*Assistant Controller*

First Elected: 08/28/2008 End Date: 05/01/2009

**Michael C. Pearl**

*Assistant Controller*

First Elected: 08/28/2008 End Date: 05/01/2009

**O. J. Toups**

*Assistant Controller*

First Elected: 08/28/2008 End Date: 05/01/2009

**David L. Williams**

*Assistant Controller*

First Elected: 06/19/2007 End Date: 05/01/2009

*Assistant Controller & Tax Officer*

First Elected: 05/01/2009 End Date:

**Solape O. Delano**

*Assistant Secretary*

First Elected: 05/01/2009 End Date:

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**WGR Asset Holding Company LLC**

**Jeffrey R. Fiske**

*Assistant Secretary*

First Elected: 05/01/2009 End Date:

**Amanda M. McMillian**

*Assistant Secretary*

First Elected: 05/01/2009 End Date:

*Assistant Secretary*

First Elected: 06/19/2007 End Date: 01/14/2008

**Margaret E. Roark**

*Assistant Secretary*

First Elected: 08/28/2008 End Date:

**Benjamin M Fink**

*Assistant Treasurer*

First Elected: 08/20/2009 End Date:

**Stephen J. Foster**

*Assistant Treasurer*

First Elected: 06/19/2007 End Date:

**Jeremy M. Smith**

*Assistant Treasurer*

First Elected: 08/28/2008 End Date:

**R. W. Tonnesen**

*Assistant Treasurer and Assistant Secretary*

First Elected: 06/19/2007 End Date: 05/01/2009

## Directors/Officers Report

From 01/01/2007 to 06/07/2010

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### WGR Asset Holding Company LLC

#### *Assistant Treasurer*

First Elected: 05/01/2009      End Date:

#### **Robert P. Daniels**

##### *Senior Vice President*

First Elected: 08/28/2008      End Date: 05/01/2009

#### **Robert G. Gwin**

##### *Senior Vice President*

First Elected: 08/28/2008      End Date: 05/01/2009

#### **David L. Siddall**

##### *Vice President and Secretary*

First Elected: 08/28/2008      End Date: 05/01/2009

#### **Ronald D. Buehner**

##### *Assistant Secretary*

First Elected: 08/28/2008      End Date: 05/01/2009

#### **Edward L. Wood**

##### *Assistant Secretary*

First Elected: 08/28/2008      End Date: 05/01/2009

**EXHIBIT B**

# WGR ASSET HOLDING COMPANY LLC AS OF 6/7/2010

WGR Asset Holding Company LLC

*only New Mex asset*

<sup>1</sup>Discreet Assets below transferred to WGR Asset Holding Company LLC effective 12/3/07

Discreet Assets<sup>1</sup>: Powder River Gathering (formerly owned by Western Gas Resources, Inc.)  
 San Juan Plant and Gathering (formerly owned by Western Gas Resources, Inc.)  
 Strawn Pipeline (formerly owned by Anadarko Gathering Company)  
 Monell NGL Plant (formerly owned by Anadarko Gathering Company)  
 Atlantic Rim Gathering (formerly owned by Anadarko Gathering Company)  
 South Kansas (formerly owned by Anadarko Gathering Company)  
 Rusk County Gathering (aka Henderson Gathering System; formerly owned by Anadarko Gathering Company)

Springfield Pipeline LLC

formerly subsidiary of Anadarko Gathering Company  
 (membership interest transfer to WGR Asset Holding Company LLC effective 12/3/07)

Assets: Springfield Pipeline

Anadarko Wattenberg Company, LLC

formerly subsidiary of Anadarko Gathering Company  
 (membership interest transfer to WGR Asset Holding Company LLC effective 12/3/07)

Assets: Crude Line from Wattenberg to Cushing / White Cliffs / SemCrude

Anadarko Natural Gas Company LLC

f/k/a, Anadarko Natural Gas Company (effective change 5/26/07)  
 formerly subsidiary of Anadarko Petroleum Corporation  
 (membership interest transfer to WGR Asset Holding Company LLC effective 11/1/07)

Assets: Hugoton Residue Delivery System (Regulated System)

Kerr-McGee Gathering LLC

formerly subsidiary of Kerr-McGee Oil & Gas Onshore LP  
 (membership interest transfer to WGR Asset Holding Company LLC effective 11/1/07)

Assets: Wattenberg Gathering System  
 Wattenberg BP 6% ownership

Sabine Valley Pipeline LLC

f/k/a, Sabine Valley Pipeline, Inc. (effective change 11/2/07)  
 formerly subsidiary of Anadarko E&P Company LP  
 (stock transfer to WGR Asset Holding Company LLC effective 11/1/07)

Assets: Sabine Valley Gathering

Wamsutter Pipeline LLC

f/k/a, Wamsutter Pipeline, Inc. (effective change 11/2/07)  
 formerly subsidiary of Anadarko Pipeline Company  
 (stock transfer to WGR Asset Holding Company LLC effective 11/1/07)

Assets: Wyoming Wamsutter Gathering

Anadarko Uintah Midstream, LLC

f/k/a, Westport Field Services, LLC (effective change 4/23/08)  
 formerly subsidiary of Kerr-McGee (Nevada) LLC  
 (membership interest transfer to WGR Asset Holding Company LLC effective 11/1/07)

Assets: Natural Buttes Gathering  
 Owner of 24% Equity Investment in Chipeta Processing LLC with WGR Operating, LP and Ute Energy

Chipeta Processing LLC  
 (24% Interest)

Assets: Chipeta Gas Plant (formerly owned by Anadarko Uintah Midstream, LLC, effective change 5/1/08)

Mountain Gas Resources LLC

f/k/a, Mountain Gas Resources, Inc. (effective change 11/1/07)  
 formerly subsidiary of Western Gas Resources, Inc.  
 (stock transfer to WGR Asset Holding Company LLC effective 11/1/07)

Assets: Yellow Creek  
 Cherokee Gathering  
 Granger Straddle Plant  
 Red Desert Complex  
 Wind River Gathering  
 Owner of 22% Equity Investment in Rendezvous Gas Services, L.L.C. with Questar Gas Management Company

Mountain Gas Transportation LLC

f/k/a, Mountain Gas Transportation, Inc. (effective change 11/1/07)

Assets: Small transportation line in the Granger Complex location

Rendezvous Gas Services, L.L.C.  
 (50% Interest)

Assets: Rendezvous Gathering System

Western Gas Resources Texas LLC

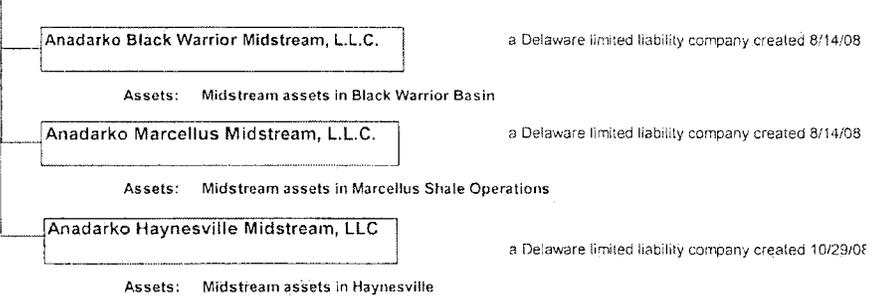
f/k/a, Western Gas Resources - Texas, Inc. (effective change 11/1/07)  
 formerly subsidiary of Western Gas Resources, Inc.  
 (stock transfer to WGR Asset Holding Company LLC effective 11/1/07)

Assets: Formerly owned Mitchell Puckett and part of Gomez System

Delaware Basin JV Gathering LLC

formerly subsidiary of Western Gas Resources, Inc.  
 (membership interest transfer to WGR Asset Holding Company LLC effective 4/30/08)

Assets: 50% Undivided interest in Haley expansion (jointly owned w/ Chesapeake)







# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

**Mark E. Fesmire, P.E.**

Director

**Oil Conservation Division**

April 3, 2007

Kent M. Weissling  
Anadarko/Western Gas Resources Inc.  
P.O. Box 1330  
Houston, Texas 77251-1330

Re: Discharge Permit GW-033  
Western Gas Resources, Inc.  
San Juan River Gas Plant  
San Juan County, New Mexico

Dear Mr. Weissling:

Pursuant to Water Quality Control Commission (WQCC) Regulations 20.6.2.3000 - 20.6.2.3114 NMAC, the Oil Conservation Division (OCD) hereby approves the discharge permit for the Western Gas Resources, Inc San Juan Gas Plant GW-033 located in Section 1, Township 29 North, Range 15 West, NMPM, San Juan County, New Mexico, under the conditions specified in the enclosed **Attachment To The Discharge Permit**. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this letter including permit fees.**

Please be advised that approval of this permit does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If you have any questions, please contact Leonard Lowe of my staff at (505-476-3492) or E-mail leonard.lowe@state.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge permit review.

Sincerely,

Wayne Price

Environmental Bureau Chief

LWP/lrl

Attachments-1

xc: OCD District Office

**ATTACHMENT TO THE DISCHARGE PERMIT  
WESTERN GAS RESOURCES, INC. SAN JUAN GAS PLANT (GW-033)  
DISCHARGE PERMIT APPROVAL CONDITIONS  
April 3, 2007**

**Please remit a check for \$4000.00 made payable to Water Quality Management Fund:**

**Water Quality Management Fund  
C/o: Oil Conservation Division  
1220 S. Saint Francis Drive  
Santa Fe, New Mexico 87505**

- 1. Payment of Discharge Plan Fees:** All discharge permits are subject to WQCC Regulations. Every billable facility that submits a discharge permit application will be assessed a filing fee of \$100.00, plus a renewal flat fee (*see* WQCC Regulation 20.6.2.3114 NMAC). The Oil Conservation Division (“OCD”) has received the required \$100.00 filing fee. However, the owner/operator still owes the required \$4000.00 renewal permit fee for a gas processing plant.
- 2. Permit Expiration and Renewal:** Pursuant to WQCC Regulation 20.6.2.3109.H.4 NMAC, this permit is valid for a period of five years. **The permit will expire on December 29, 2011** and an application for renewal should be submitted no later than 120 days before that expiration date. Pursuant to WQCC Regulation 20.6.2.3106.F NMAC, if a discharger submits a discharge permit renewal application at least 120 days before the discharge permit expires and is in compliance with the approved permit, then the existing discharge permit will not expire until the application for renewal has been approved or disapproved.
- 3. Permit Terms and Conditions:** Pursuant to WQCC Regulation 20.6.2.3104 NMAC, when a permit has been issued, the owner/operator must ensure that all discharges shall be consistent with the terms and conditions of the permit. In addition, all facilities shall abide by the applicable rules and regulations administered by the OCD pursuant to the Oil and Gas Act, NMSA 1978, Sections 70-2-1 through 70-2-38.
- 4. Owner/Operator Commitments:** The owner/operator shall abide by all commitments submitted in its August 30th, 2006 discharge plan renewal application, including attachments and subsequent amendments and these conditions for approval. Permit applications that reference previously approved plans on file with the division shall be incorporated in this permit and the owner/operator shall abide by all previous commitments of such plans and these conditions for approval.

**5. Modifications:** WQCC Regulation 20.6.2.3107.C, and 20.6.2.3109 NMAC addresses possible future modifications of a permit. The owner/operator (discharger) shall notify the OCD of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants. The Division Director may require a permit modification if any water quality standard specified at 20.6.2.3103 NMAC is being or will be exceeded, or if a toxic pollutant as defined in WQCC Regulation 20.6.2.7 NMAC is present in ground water at any place of withdrawal for present or reasonably foreseeable future use, or that the Water Quality Standards for Interstate and Intrastate streams as specified in 20.6.4 NMAC are being or may be violated in surface water in New Mexico.

**6. Waste Disposal and Storage:** The owner/operator shall dispose of all wastes at an OCD-approved facility. Only oil field RCRA-exempt wastes may be disposed of by injection in a Class II well. RCRA non-hazardous, non-exempt oil field wastes may be disposed of at an OCD-approved facility upon proper waste determination pursuant to 40 CFR Part 261. Any waste stream that is not listed in the discharge permit application must be approved by the OCD on a case-by-case basis.

**A. OCD Rule 712 Waste:** Pursuant to OCD Rule 712 (19.15.9.712 NMAC) disposal of certain non-domestic waste without notification to the OCD is allowed at NMED permitted solid waste facilities if the waste stream has been identified in the discharge permit and existing process knowledge of the waste stream does not change.

**B. Waste Storage:** The owner/operator shall store all waste in an impermeable bermed area, except waste generated during emergency response operations for up to 72 hours. All waste storage areas shall be identified in the discharge permit application. Any waste storage area not identified in the permit shall be approved on a case-by-case basis only. The owner/operator shall not store oil field waste on-site for more than 180 days unless approved by the OCD.

**7. Drum Storage:** The owner/operator must store all drums, including empty drums, containing materials other than fresh water on an impermeable pad with curbing. The owner/operator must store empty drums on their sides with the bungs in place and lined up on a horizontal plane. The owner/operator must store chemicals in other containers, such as tote tanks, sacks, or buckets on an impermeable pad with curbing.

**8. Process, Maintenance and Yard Areas:** The owner/operator shall either pave and curb or have some type of spill collection device incorporated into the design at all process, maintenance, and yard areas which show evidence that water contaminants from releases, leaks and spills have reached the ground surface.

**9. Above Ground Tanks:** The owner/operator shall ensure that all aboveground tanks have impermeable secondary containment (e.g., liners and berms), which will contain a volume of at least one-third greater than the total volume of the largest tank or all interconnected tanks. The owner/operator shall retrofit all existing tanks before discharge permit renewal. Tanks that contain fresh water or fluids that are gases at atmospheric temperature and pressure are exempt from this condition.

**10. Labeling:** The owner/operator shall clearly label all tanks, drums, and containers to identify their contents and other emergency notification information. The owner/operator may use a tank code numbering system, which is incorporated into their emergency response plans.

**11. Below-Grade Tanks/Sumps and Pits/Ponds.**

A. All below-grade tanks and sumps must be approved by the OCD prior to installation and must incorporate secondary containment with leak detection into the design. The owner/operator shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal. All existing below-grade tanks and sumps without secondary containment and leak detection must be tested annually or as specified herein. Systems that have secondary containment with leak detection shall have a monthly inspection of the leak detection system to determine if the primary containment is leaking. Small sumps or depressions in secondary containment systems used to facilitate fluid removal are exempt from these requirements if fluids are removed within 72 hours.

B. All pits and ponds, including modifications and retrofits, shall be designed by a certified registered professional engineer and approved by the OCD prior to installation. In general, all pits or ponds shall have approved hydrologic and geologic reports, location, foundation, liners, and secondary containment with leak detection, monitoring and closure plans. All pits or ponds shall be designed, constructed and operated so as to contain liquids and solids in a manner that will protect fresh water, public health, safety and the environment for the foreseeable future. The owner/operator shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal.

C. The owner/operator shall ensure that all exposed pits, including lined pits and open top tanks (8 feet in diameter or larger) shall be fenced, screened, netted, or otherwise rendered non-hazardous to wildlife, including migratory birds.

D. The owner/operator shall maintain the results of tests and inspections at the facility covered by this discharge permit and available for OCD inspection. The owner/operator shall report the discovery of any system which is found to be leaking or has lost integrity to the OCD within 15 days. The owner/operator may propose various methods for testing such as pressure testing to 3 pounds per square inch greater than normal operating pressure and/or visual inspection of cleaned tanks and/or sumps, or other OCD-approved methods. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

**12. Underground Process/Wastewater Lines:**

A. The owner/operator shall test all underground process/wastewater pipelines at least once every five (5) years to demonstrate their mechanical integrity, except lines containing fresh water or fluids that are gases at atmospheric temperature and pressure. Pressure rated pipe shall be tested by pressuring up to one and one-half times the normal operating pressure, if possible, or for atmospheric drain systems, to 3 pounds per square inch greater than normal operating pressure, and pressure held for a minimum of 30 minutes with no more than a 1% loss/gain in pressure. The owner/operator may use other methods for testing if approved by the OCD.

B. The owner/operator shall maintain underground process and wastewater pipeline schematic diagrams or plans showing all drains, vents, risers, valves, underground piping, pipe type, rating, size, and approximate location. All new underground piping must be approved by the OCD prior to installation. The owner/operator shall report any leaks or loss of integrity to the OCD within 15 days of discovery. The owner/operator shall maintain the results of all tests at the facility covered by this discharge permit and they shall be available for OCD inspection. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

**13. Class V Wells:** The owner/operator shall close all Class V wells (e.g., septic systems, leach fields, dry wells, etc.) that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes unless it can be demonstrated that ground water will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD-regulated facilities that inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only, must be permitted by the New Mexico Environment Department (NMED).

**14. Housekeeping:** The owner/operator shall inspect all systems designed for spill collection/prevention and leak detection at least monthly to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices shall be emptied of fluids within 72 hours of discovery. The owner/operator shall maintain all records at the facility and available for OCD inspection.

**15. Spill Reporting:** The owner/operator shall report all unauthorized discharges, spills, leaks and releases and conduct corrective action pursuant to WQCC Regulation 20.5.12.1203 NMAC and OCD Rule 116 (19.15.3.116 NMAC). The owner/operator shall notify both the OCD District Office and the Santa Fe Office within 24 hours and file a written report within 15 days.

**16. OCD Inspections:** The OCD may place additional requirements on the facility and modify the permit conditions based on OCD inspections. As a result of OCD's inspection on January 7, 2007 Western Gas Resources, Inc. shall address the issues noted during the inspection listed below and comply by January 7, 2008.

A. Netting covering the pond should be checked after any major weather changes (i.e. snow storm, wind storms, etc.) to ensure the integrity of its function. (Photo 1 & Photo 2.)

- B. Used activated alumni need to have a defined area to be placed other than directly on the ground (i.e. concrete area) (Photo 4).
- C. Basic housekeeping needs a little work: Removing vegetation in and around Evap. Pond, (Photo 3), removing debris from liners around tanks (Photo 5). Debris may tear liners. Properly adjust liners currently in use (Photo 6).
- D. Shop drum storage area. Barrels need to be properly stored and identified. This was noted in the 2001 inspection.
- E. Larger secondary containment needs to be placed for product tanks near drum storage area (Photo 8).

**17. Storm Water:** The owner/operator shall implement and maintain run-on and runoff plans and controls. The owner/operator shall not discharge any water contaminant that exceeds the WQCC standards specified in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) including any oil sheen in any stormwater run-off. The owner/operator shall notify the OCD within 24 hours of discovery of any releases and shall take immediate corrective action(s) to stop the discharge.

**18. Unauthorized Discharges:** The owner/operator shall not allow or cause water pollution, discharge or release of any water contaminant that exceeds the WQCC standards listed in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) unless specifically listed in the permit application and approved herein. *An unauthorized discharge is a violation of this permit.*

**19. Vadose Zone and Water Pollution:** The owner/operator shall address any contamination through the discharge permit process or pursuant to WQCC 20.6.2.4000-.4116 NMAC (Prevention and Abatement of Water Pollution). The OCD may require the owner/operator to modify its permit for investigation, remediation, abatement, and monitoring requirements for any vadose zone or water pollution. Failure to perform any required investigation, remediation, abatement and submit subsequent reports will be a violation of the permit.

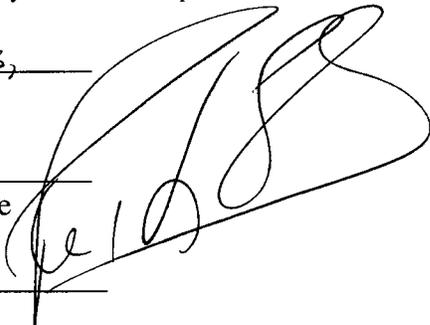
**20. Additional Site Specific Conditions:**

**21. Transfer of Discharge Permit (WQCC 20.6.2.3111)** Prior to any transfer of ownership, control, or possession (whether by lease, conveyance or otherwise) of a facility with a discharge permit, the transferror shall notify the transferee in writing of the existence of the discharge permit, and shall deliver or send by certified mail to the department a copy of such written notification, together with a certification or other proof that such notification has in fact been received by the transferee. Upon receipt of such notification, the transferee shall have the duty to inquire into all of the provisions and requirements contained in such discharge permit, and the transferee shall be charged with notice of all such provisions and requirements as they appear of record in the department's file or files concerning such discharge permit. The transferee (new owner/operator) shall sign and return an original copy of these permit conditions and provide a written commitment to comply with the terms and conditions of the previously approved discharge permit.

**22. Closure:** The owner/operator shall notify the OCD when operations of the facility are to be discontinued for a period in excess of six months. Prior to closure of the facility, the operator shall submit a closure plan for approval. Closure and waste disposal shall be in accordance with the statutes, rules and regulations in effect at the time of closure.

**23. Certification: Western Gas Resources, Inc., (Owner/Operator),** by the officer whose signature appears below, accepts this permit and agrees to comply with all submitted commitments, including these terms and conditions contained here. **Owner/Operator** further acknowledges that the OCD may, for good cause shown, as necessary to protect fresh water, public health, safety, and the environment, change the conditions and requirements of this permit administratively.

Conditions accepted by: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

Western Gas Resources,  
Company Name-print name above  
Rex L. Specht  
Company Representative- print name  
  
Company Representative- signature  
Title Rockies mgr operations  
Date: 4/15/07



Feb 07, 2007

OCD Inspectors- Leonard Lowe and Brandon Powell



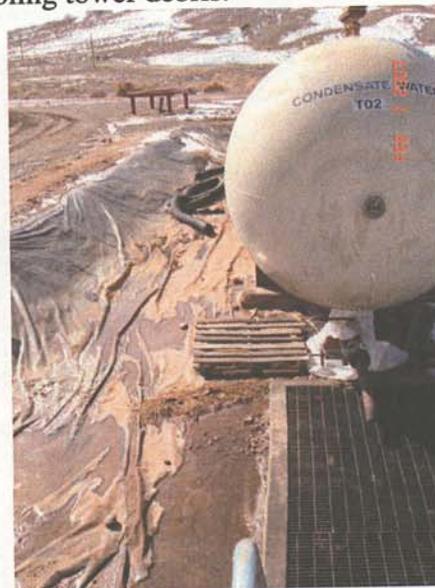
**Photo 1** – Facing East. Evap. Pond located south of facility. Fowl covered in residue (condensate) from pond.



**Photo 4** – Facing West. A pile of used activated alumina, Mo-sieve and old cooling tower debris.



**Photo 2** – Facing North. Deceased fowl on south rim of pond. Sagging nets.



**Photo 5** – Condensate water tank for pigging station debris on liner.



**Photo 3** – Facing SW. Brush located on west rim of pond. Brush in pond.



**Photo 6** – Near pigging station condensate container. Disrupted liner.

Feb 07, 2007

OCD Inspectors- Leonard Lowe and Brandon Powell



**Photo 7** – Shop drum storage area.  
Unlabeled barrels.



**Photo 8** – Lance service Co's product tanks with insufficient secondary containment.

**ATTACHMENT TO THE DISCHARGE PLAN GW-033 APPROVAL  
Western Gas Resources, Inc. San Juan Gas Plant  
DISCHARGE PLAN APPROVAL CONDITIONS  
February 11, 2002**

1. Payment of Discharge Plan Fees: The \$100.00 filing fee and \$4000.00 flat fee has been received by the OCD.
2. Commitments: Western Gas Resources, Inc. will abide by all commitments submitted in the discharge plan renewal application dated December 05, 2001 including attachments and subsequent submittal Addendum to Discharge Plan E-Mail dated January 04, 2002 including attachments, and these conditions for approval.
3. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.
4. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.
5. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.
6. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.
7. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

8. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must be tested to demonstrate their mechanical integrity no later than July 01, 2002 and every year from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD annually by December 29 of each year.
9. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity no later than July 01, 2002 and every 5 years, from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD by December 29, 2002.
10. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be approved for construction and/or operation unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.
11. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices will be emptied of fluids within 48 hours of discovery. A record of inspection will be retained on site for a period of five years.
12. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203. to the OCD Aztec District Office.
13. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge plan will be approved by OCD on a case-by-case basis.

Rule 712 Waste: Pursuant to Rule 712, disposal of certain non-domestic waste is allowed at solid waste facilities permitted by the New Mexico Environment Department as long as the waste stream is identified in the discharge plan, and existing process knowledge of the waste stream does not change without notification to the Oil Conservation Division. The following waste is hereby approved:

All the waste streams listed in the Addendum to Discharge Plan E-Mail dated January 04, 2002 (attached), except for petroleum contaminated soils unless approved by OCD director in the event of a declared emergency.

14. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections. As a result of OCD's inspection on December 20, 2001 (copy of inspection sheet enclosed) Western Gas Resources, Inc. shall address the issues noted during the inspection listed below and shall comply by December 29, 2002.
  - A. The refined product storage tanks located within the "A" basin should be positioned to prevent spillage outside of the containment. (Ref: picture #1)
  - B. The "B" Basin drum storage area (Ref: picture #2) was noted to have empty drums stored improperly, and some drums contained unknown material or waste.
  - C. North plant area where waste piles of used activated alumina, Mo-sieve and old cooling tower debris is presently being stored. (Ref: picture #4)
  - D. North main plant inlet pigging station needs proper containment. (Ref: picture #5)
  - E. The TEG De-HY knock-out tank needs proper containment. (Ref: picture #7)
  - F. The filter drain sump area. (Ref: picture #8)
  - G. The shop pad drum storage area needs proper containment. (Ref: picture #9)
  - H. A hazardous waste determination per EPA-RCRA regulations shall be made before Lab wastewater is disposed of into the evaporation pond. Records shall be maintained for analytical results, volumes disposed, dates, etc,
  
15. Storm Water Plan: Western Gas Resources, Inc. shall maintain stormwater runoff controls as submitted in the discharge plan. As a result of Western Gas Resources, Inc.'s operations if any water contaminant that exceeds the WQCC standards listed in 20 NMAC 6.2.3101 is discharged in any stormwater run-off then Western Gas Resources, Inc. shall notify the OCD within 24 hours, modify the plan within 15 days and submit for OCD approval. Western Gas Resources, Inc. shall also take immediate corrective actions pursuant to Item 12 of these conditions.

16. Double-Lined Waste Water Evaporation Pond: A minimum freeboard will be maintained in the ponds so that no over topping of wastewater occurs. Any repairs or modifications to the pond liners and/or leak detection systems must receive prior OCD approval. Leaks and releases shall be reported pursuant to Item 12. (Spill Reporting) of these conditions.
17. Leak Detection Monitor Wells: All leak detection monitor wells must be inspected for fluids monthly. Records will be maintained to include quantity of fluid measured, date of inspection, and name of inspector. Any fluids found must be reported to the NMOCD Santa Fe Environmental Bureau and the appropriate District office within 24 hours of discovery.
18. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.
19. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.
20. Certification: **Western Gas Resources, Inc.** by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. **Western Gas Resources, Inc.** further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Conditions accepted by: **Western Gas Resources, Inc. Inc.**

Edward A. Aaba  
Company Representative- print name

[Signature] RRZ 204 Date 3/7/02  
Company Representative- Sign

Title Sr. Vice President, Operations



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON  
Governor  
Betty Rivera  
Cabinet Secretary

Lori Wrotenbery  
Director  
Oil Conservation Division

February 11, 2002

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. 5357 7218**

Ronald R. LePlatt  
Western Gas Resources, Inc.  
12200 N. Pecos Street  
Denver, Colorado 80234-3439

RE: Discharge Plan Renewal GW-033  
Western Gas Resources, Inc.  
San Juan Gas Plant  
San Juan County, New Mexico

Dear Mr. LePlatt:

The groundwater discharge plan renewal GW-033 for the Western Gas Resources, Inc. San Juan Gas Plant located in the NE/4 of Section 1, Township 29 North, Range 15 West, NMPM, San Juan County, New Mexico, **is hereby approved** under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 days of receipt of this letter.**

The original discharge plan was approved on December 29, 1986 with an expiration date of December 29, 1991. The discharge plan renewal application dated December 05, 2001 including attachments and subsequent submittal addendum to Discharge Plan (E-mail) dated January 04, 2002 submitted pursuant to Section 3106 of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals.

The discharge plan is renewed pursuant to Section 3109.C. Please note Section 3109.G, which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve Western Gas Resources, Inc. of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does it relieve Western Gas Resources, Inc. of its responsibility to comply with any other governmental authority's rules and regulations.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3104. of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C., Western Gas Resources, Inc. is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.H.4., this approval is for a period of five years. **This approval will expire December 29, 2006** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 3106.F. of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved.

The discharge plan application for the Western Gas Resources, Inc., San Juan Gas Plant is subject to the WQCC Regulation 3114. Every facility submitting a discharge plan will be assessed a fee equal to the filing fee of \$ 100.00 plus flat fee of \$ 4000.00 for gas processing plants. The flat fee may be paid in a single payment due on the date of the discharge plan approval or in five equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval and subsequent installments due on this date of each calendar year.

**Please make all checks payable to: Water Quality Management Fund  
C/o: Oil Conservation Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505.**

If you have any questions, please contact Wayne Price of my staff at (505-476-3487). On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,



Roger C. Anderson  
Environmental Bureau Chief

RCA/lwp  
Attachment-3  
xc: OCD Aztec Office

**ATTACHMENT TO THE DISCHARGE PLAN GW-033 APPROVAL  
Western Gas Resources, Inc. San Juan Gas Plant  
DISCHARGE PLAN APPROVAL CONDITIONS  
February 11, 2002**

1. Payment of Discharge Plan Fees: The \$100.00 filing fee and \$4000.00 flat fee has been received by the OCD.
2. Commitments: Western Gas Resources, Inc. will abide by all commitments submitted in the discharge plan renewal application dated December 05, 2001 including attachments and subsequent submittal Addendum to Discharge Plan E-Mail dated January 04, 2002 including attachments, and these conditions for approval.
3. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.
4. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.
5. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.
6. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.
7. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

8. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must be tested to demonstrate their mechanical integrity no later than July 01, 2002 and every year from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD annually by December 29 of each year.
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11. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices will be emptied of fluids within 48 hours of discovery. A record of inspection will be retained on site for a period of five years.
12. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203. to the OCD Aztec District Office.
13. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge plan will be approved by OCD on a case-by-case basis.

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  - B. The "B" Basin drum storage area (Ref: picture #2) was noted to have empty drums stored improperly, and some drums contained unknown material or waste.
  - C. North plant area where waste piles of used activated alumina, Mo-sieve and old cooling tower debris is presently being stored. (Ref: picture #4)
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  - E. The TEG De-HY knock-out tank needs proper containment. (Ref: picture #7)
  - F. The filter drain sump area. (Ref: picture #8)
  - G. The shop pad drum storage area needs proper containment. (Ref: picture #9)
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18. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.
19. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.
20. Certification: **Western Gas Resources, Inc.** by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. **Western Gas Resources, Inc.** further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

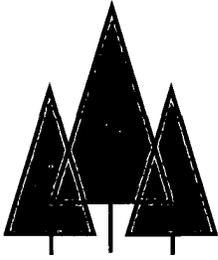
Conditions accepted by: **Western Gas Resources, Inc. Inc.**

\_\_\_\_\_  
Company Representative- print name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Company Representative- Sign

\_\_\_\_\_  
Title



# Western Gas Resources, Inc.

January 2, 1997

New Mexico Oil Conservation Division  
2040 S. Pacheco  
Attn: Mr. Pat Sanchez  
Santa Fe, NM 87505

RECEIVED

JAN - 7 1997

Environment Department  
Oil Conservation Division

RE: Submittal of Signed Attachment to the Discharge Monitoring Plan GW-33  
for Western Gas Resources, Inc. San Juan River Plant  
San Juan County, New Mexico

**Via Certified Mail P 552 518 088**

Dear Mr. Sanchez:

Western Gas Resources, Inc. (Western Gas) hereby submits the copy of the Discharge Monitoring Plan GW-33 Attachment for the San Juan River Plant located in Kirtland, New Mexico. The Attachment was sent by your office to Western Gas as part of the Discharge Plan's approval for renewal requesting a Corporate Officer's certification. The Attachment has been certified by the Northern Region Vice President. The Attachment states the New Mexico Oil Conservation Division's Conditions of Approval for the revised plan that was submitted December 17, 1996.

This should complete the Discharge Plan's requirements for renewal and final approval for the San Juan River Plant. Western Gas will notify your office within 72 hours of the pressure integrity test for the underground collection piping. As stated in the Discharge Plan GW-33, Western Gas expects to perform these tests during late spring or early summer of this year. If you have any questions or concerns, please call me at (303)450-8420.

Sincerely,

James E. Fleak, P.E. *M*  
Sr. Environmental Engineer

c: L. Hinman, K. McEvers, D. Keanini, E. Aabak, T. Marques, S. Doven, file  
NM OCD-Aztec District Office

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RECEIVED

JAN - 7 1997

Environmental Bureau  
Oil Conservation Division

Mr. James Fleak  
Western Gas Resources, Inc.  
GW-033 Renewal  
December 17, 1996  
Page 3

**ATTACHMENT TO DISCHARGE PLAN GW-033**  
**Western Gas Resources - San Juan River Plant**  
**Conditions of Approval**  
**DISCHARGE PLAN REQUIREMENTS**  
(December 17, 1996)

1. **Payment of Discharge Plan Fees:** The \$1,667.50 flat fee shall be submitted upon receipt of this approval. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the plan, with the first payment due upon receipt of this approval.
2. **Western Gas Resources Commitments:** Western Gas Resources will abide by all commitments submitted by Western Gas Resources as part of the approval from OCD dated December 20, 1991, the renewal application from Western Gas Resources dated October 31, 1996, the revision from Western Gas Resources dated December 9, 1996, the waste certification letter from Western Gas Resources dated December 11, 1996, and this approval letter with conditions of approval from OCD dated December 17, 1996.
3. **Drum Storage:** All drums containing materials other than fresh water must be stored on an impermeable pad and curb type containment. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets should also be stored on an impermeable pad and curb type containment.  
  
All drums and chemical containers shall be clearly labeled to identify their contents and other emergency information necessary if they were to rupture, spill, or ignite.
4. **Process Areas:** All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.
5. **Above Ground Tanks:** All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad.
6. **Above Ground Saddle Tanks:** Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.
7. **Tank Labeling:** All tanks should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

RECEIVED

JAN - 7 1997

Environmental Bureau  
Oil Conservation Division

Mr. James Fleak  
Western Gas Resources, Inc.  
GW-033 Renewal  
December 17, 1996  
Page 4

8. **Below Grade Tanks/Sumps:** All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks that do not have secondary containment and leak detection must demonstrate integrity on an annual basis. Integrity tests include pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks /or sumps.

9. **Underground Process/Wastewater Lines:** All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity at present and then every 5 years there after. Companies may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing so that an OCD representative may witness the testing.

10. **Housekeeping:** All systems designed for spill collection/prevention should be inspected to ensure proper operation and to prevent overtopping or system failure.

Any soils contaminated with a non-exempt waste at the facility will be tested for hazardous constituents, and after receiving OCD approval, will be disposed of at an OCD approved site.

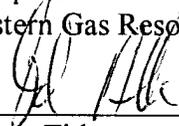
11. **Spill Reporting:** All spills/releases shall be reported pursuant to OCD Rule 116 and WQCC 1203 to the OCD Aztec District Office at (505)-334-6178.

12. **Transfer of Discharge Plan:** The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

13. **Closure:** The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

14. **Certification:** Western Gas Resources, by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. Western Gas Resources, further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect groundwater, human health and the environment.

Accepted:  
Western Gas Resources

by  \_\_\_\_\_  
Title

VICE PRESIDENT, NORTHERN REGION



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

December 17, 1996

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-288-258-727**

Mr. James Fleak, P.E.  
Sr. Environmental Engineer  
Western Gas Resources, Inc.  
12200 N. Pecos St.  
Denver, CO 80234-3439

**RE: Discharge Plan Renewal GW-033  
San Juan River Gas Plant  
San Juan County, New Mexico**

Dear Mr. Fleak:

The discharge plan renewal for the Western Gas Resources, Inc. San Juan River Gas Plant GW-033 located in Section 1, Township 29 North, Range 15 West, NMPM, San Juan County, New Mexico, is hereby approved under the conditions contained in the enclosed attachment. The discharge plan renewal consists of the approval from OCD dated December 20, 1991, the renewal application from Western Gas Resources dated October 31, 1996, the revision from Western Gas Resources dated December 9, 1996, the waste certification letter from Western Gas Resources dated December 11, 1996, and this approval letter with conditions of approval from OCD dated December 17, 1996. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within ten (10) working days of receipt of this letter.**

The discharge plan renewal was submitted pursuant to Section 3107.C of the New Mexico Water Quality Control Commission Regulations. Please note Sections 3109.E and 3109.F which provide for possible future amendments or modifications of the plan. Please be advised that the approval of this renewal does not relieve Western Gas Resources of liability should the operations associated with this facility result in pollution of surface water, ground water, or the environment.

Please be advised that all exposed pits, including lined pits and open top tanks (tanks exceeding 16 feet in diameter), shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Mr. James Fleak  
Western Gas Resources, Inc.  
GW-033 Renewal  
December 17, 1996  
Page 2

Please note that Section 3104 of the regulations requires that "When a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C Western Gas Resources is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

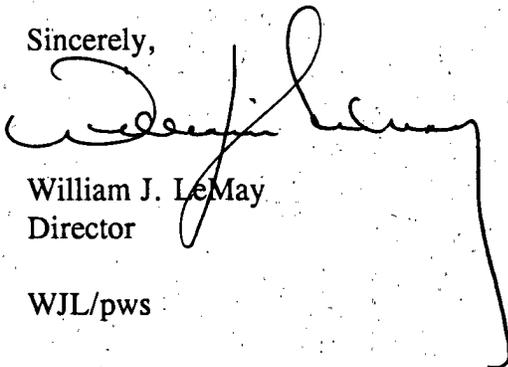
Pursuant to Section 3109.G.4, this plan is for a period of five (5) years. This approval will expire December 29, 2001, and an application for renewal should be submitted in ample time before that date. It should be noted that all discharge plan facilities will be required to submit plans for, or the results of, an underground drainage testing program as a requirement for discharge plan approval.

The discharge plan renewal for the Western Gas Resources San Juan River Plant GW-033 is subject to the WQCC Regulation 3114 discharge plan fee. Every billable facility submitting a discharge plan renewal will be assessed a fee equal to the filing fee of fifty dollars (\$50) plus the flat fee of one-thousand and six-hundred and sixty-seven dollars and fifty cents (\$1,667.50) for Gas Plants renewing existing discharge plans.

The \$50 filing fee has been received by the OCD. The flat fee for an approved discharge plan has not been received by the OCD.

On behalf of the staff of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,



William J. LeMay  
Director

WJL/pws

Attachment

xc: Mr. Denny Foust - Aztec OCD District Office.

P 288 258 727

US Postal Service  
**Receipt for Certified Mail**  
No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to	WESTGAS - Mr Fleak
Street & Number	DP RENEWAL
Post Office, State, & ZIP Code	GW-033
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

PS Form 3800, April 1995

Mr. James Fleak  
Western Gas Resources, Inc.  
GW-033 Renewal  
December 17, 1996  
Page 3

**ATTACHMENT TO DISCHARGE PLAN GW-033**  
**Western Gas Resources - San Juan River Plant**  
**Conditions of Approval**  
**DISCHARGE PLAN REQUIREMENTS**  
(December 17, 1996)

1. **Payment of Discharge Plan Fees:** The \$1,667.50 flat fee shall be submitted upon receipt of this approval. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the plan, with the first payment due upon receipt of this approval.
2. **Western Gas Resources Commitments:** Western Gas Resources will abide by all commitments submitted by Western Gas Resources as part of the approval from OCD dated December 20, 1991, the renewal application from Western Gas Resources dated October 31, 1996, the revision from Western Gas Resources dated December 9, 1996, the waste certification letter from Western Gas Resources dated December 11, 1996, and this approval letter with conditions of approval from OCD dated December 17, 1996.
3. **Drum Storage:** All drums containing materials other than fresh water must be stored on an impermeable pad and curb type containment. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets should also be stored on an impermeable pad and curb type containment.  
  
All drums and chemical containers shall be clearly labeled to identify their contents and other emergency information necessary if they were to rupture, spill, or ignite.
4. **Process Areas:** All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.
5. **Above Ground Tanks:** All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad.
6. **Above Ground Saddle Tanks:** Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.
7. **Tank Labeling:** All tanks should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

Mr. James Fleak  
Western Gas Resources, Inc.  
GW-033 Renewal  
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8. **Below Grade Tanks/Sumps:** All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks that do not have secondary containment and leak detection must demonstrate integrity on an annual basis. Integrity tests include pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks /or sumps.

9. **Underground Process/Wastewater Lines:** All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity at present and then every 5 years there after. Companies may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing so that an OCD representative may witness the testing.

10. **Housekeeping:** All systems designed for spill collection/prevention should be inspected to ensure proper operation and to prevent overtopping or system failure.

Any soils contaminated with a non-exempt waste at the facility will be tested for hazardous constituents, and after receiving OCD approval, will be disposed of at an OCD approved site.

11. **Spill Reporting:** All spills/releases shall be reported pursuant to OCD Rule 116 and WQCC 1203 to the OCD Aztec District Office at (505)-334-6178.

12. **Transfer of Discharge Plan:** The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

13. **Closure:** The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

14. **Certification:** Western Gas Resources, by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. Western Gas Resources, further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect groundwater, human health and the environment.

Accepted:  
Western Gas Resources

by \_\_\_\_\_  
Title

State of New Mexico  
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT  
Santa Fe, New Mexico 87505



OIL CONSERVATION DIVISION



December 20, 1991

BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY  
MATTHEW BACA  
DEPUTY SECRETARY

CERTIFIED MAIL  
RETURN RECEIPT NO. P-690-155-043

Mr Gary W. Davis  
Western Gas Resources, Inc.  
12200 N. Pecos Street  
Suite 230  
Denver, Colorado 80234

RE: Discharge Plan GW-33  
San Juan River Natural Gas Processing Plant  
San Juan County, New Mexico

Dear Mr. Davis:

The groundwater discharge plan renewal GW-33 for the Western Gas Resources Inc. San Juan River Natural Gas Processing Plant located in Section 1, Township 29 North, Range 15 West, NMPM, San Juan County, New Mexico is hereby approved. The discharge plan consists of the original discharge plan as approved on December 29, 1986 and the renewal application dated September 21, 1991.

The discharge plan was submitted pursuant to Section 3-106 of the Water Quality Control Commission Regulations. It is approved pursuant to section 3-109.A. Please note Section 3-109.F., which provides for possible future amendments of the plan. Please be advised that approval of this plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment which may be actionable under other laws and/or regulations.

Please be advised that all exposed pits, including lined pits and open top tanks (tanks exceeding 16 feet in diameter) shall be screened, netted or otherwise rendered nonhazardous to wildlife including migratory birds.

VILLAGRA BUILDING - 408 Galisteo

Forestry and Resources Conservation Division  
P.O. Box 1948 87504-1948  
827-5830

Park and Recreation Division  
P.O. Box 1147 87504-1147  
827-7465

2040 South Pacheco

Office of the Secretary  
827-5950

Administrative Services  
827-5925

Energy Conservation & Management  
827-5900

Mining and Minerals  
827-5970

LAND OFFICE BUILDING - 310 Old Santa Fe Trail

Oil Conservation Division  
P.O. Box 2088 87504-2088  
827-5800

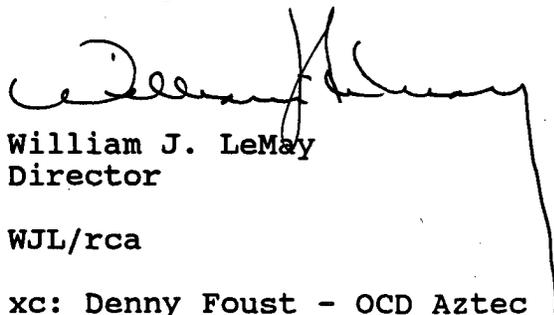
Mr. Gary W. Davis  
December 20, 1991  
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Please note that section 3-104 of the regulations requires that "When a plan has been approved, discharges must be consistent with the terms and conditions of the plan". Pursuant to Section 3-107.C. you are required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3-109.G.4., this plan approval is for a period of five years. This approval will expire December 29, 1996 and you should submit an application for renewal in ample time before that date.

On behalf of the staff of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,



William J. LeMay  
Director

WJL/rca

xc: Denny Foust - OCD Aztec