

GW - 71-0

**GENERAL  
CORRESPONDENCE**

**YEAR(S):**

1995

*Chaco Plant  
Waste.*

**Chaco Plant  
Non-Contact Wastewater Use  
December 21, 1995**

Four-Four has requested the use of the non-contact wastewater generated and discharged at El Paso Natural Gas Company's ("El Paso") Chaco Plant pursuant to the approved NMOCD Discharge Plan. El Paso will allow Four-Four Inc. to use the non-contact Wastewater provided Four-Four agree in advance to the following:

1. Prior to obtaining the wastewater from the Chaco Ponds, Four-Four truck drivers will notify the Chaco Plant Superintendent;
2. Use of the wastewater is limited to Four-Four's oil and natural gas exploration and production activities and will never be used in a way that allows the water to be discharged to any water of the U.S. as defined in the U.S. Clean Water Act (33 U.S.C. §§ 1251 to 1387) and the New Mexico Water Quality Act (N.M. Stat. Ann. §§ 74-6-1 to 74-6B-14);
3. The wastewater will never be discharged less than one hundred feet (100') from the nearest natural boundary of any wash or arroyo; and,
4. Four-Four Inc. releases El Paso from any liability, claims or causes of action which may arise from the procurement, use and discharge of the wastewater by Four-Four, its agent, or its contractors.

If Four-Four agrees to abide by the above terms and conditions, please indicate Four-Four approval by signing in the space below and return this letter to El Paso Natural Gas (Mr. Patrick Marquez).

**AGREED TO AND ACCEPTED**

this 21 day December 1995.

Four-Four Inc.

Signed By Mr. Bernie Strunk

Title President

**Chaco Plant**  
**Non-Contact Wastewater Use**  
**December 21, 1995**

Four-Four has requested the use of the non-contact wastewater generated and discharged at El Paso Natural Gas Company's ("El Paso") Chaco Plant pursuant to the approved NMOCD Discharge Plan. El Paso will allow Four-Four Inc. to use the non-contact Wastewater provided Four-Four agree in advance to the following:

1. Prior to obtaining the wastewater from the Chaco Ponds, Four-Four truck drivers will notify the Chaco Plant Superintendent;
2. Use of the wastewater is limited to Four-Four's oil and natural gas exploration and production activities and will never be used in a way that allows the water to be discharged to any water of the U.S. as defined in the U.S. Clean Water Act (33 U.S.C. §§ 1251 to 1387) and the New Mexico Water Quality Act (N.M. Stat. Ann §§ 74-6-1 to 74-6B-14);
3. The wastewater will never be discharged less than one hundred feet (110') from the nearest natural boundary of any wash or arroyo; and,
4. Four-Four Inc. releases El Paso from any liability, claims or causes of action which may arise from the procurement, use and discharge of the wastewater by Four-Four, its agent, or its contractors.

If Four-Four agrees to abide by the above terms and conditions, please indicate Four-Four approval by signing in the space below and return this letter to El Paso Natural Gas (Mr. Patrick Marquez).

**AGREED TO AND ACCEPTED**

this 21 day December 1995.

**Four-Four Inc.**

Signed By Mr. Bernie Strunk

Title President

2.21 million gallons

Dustin Walsh



## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

# Chaco Plant Non-Contact Waste Water Acceptance Log

Date	Company	Amount (Barrels)	Intended Use	Final Disposition of Water	Signature
12/17/95	El Paso Natural Gas San Juan Triangle Pro.	143	Hydrotest 36" pipe 3228 line	dumped <del>back</del> into Pond @ El Paso	Benjamin Kays
12/17/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Hydrotest 36" Pipe 3228 Line		Benjamin Kays
12/17/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Hydrotest 36" Pipe 3228 Line		Benjamin Kays
12/17/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Hydrotest 36" Pipe 3228 Line		Benjamin Kays
12/17/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Hydrotest 36" Pipe 3228 Line		Benjamin Kays
12/21/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Dewatering Pipe 3228 Line	dumped back into CHACO PLANT POND	Benjamin Kays
12/21/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Dewatering Pipe 3228 Line	dumped back into CHACO PLANT POND	Benjamin Kays
12/21/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Dewatering Pipe 3228 Line	dumped back into CHACO PLANT POND	Benjamin Kays
12/21/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Dewatering Pipe 3228 Line	dumped back into CHACO PLANT POND	Benjamin Kays
12/21/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Dewatering Pipe 3228 Line	dumped back into CHACO PLANT POND	Benjamin Kays
12/21/95	EL Paso Natural Gas San Juan Triangle Pro.	143	Dewatering Pipe 3228 Line	dumped back into CHACO PLANT POND	Benjamin Kays

## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

# Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

# Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

[illegible]

## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]



[illegible]

## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

## **2.0 GENERAL WORKING SPACE REQUIREMENTS AND RESTRICTIONS**

- 2.1** Working space details are provided in DWG. # 1219.1-1. The new pipeline will be constructed on the Navajo Nation, 20 ft. west of an existing EPNG pipeline. The majority of the construction right of way is 80 ft in width. However, there are 18 different areas along the proposed route that will require special right-of-way restrictions or avoidance measures due to cultural resources and one area that will require right-of-way restriction and avoidance due to biological resources. These areas are identified both on Drwgs. 1219.0-1 thru 1219.0-7 and on the Line List in Section 9 of the Environmental Construction Handbook. Where fences or other special barriers are required, they will be put in place by a third-party cultural resources contractor provided by EPNG. The proposed pipeline does not cross any wetlands.
- 2.2** All personnel and equipment shall remain within the working space requirements at all times.

## **3.0 FURNISHED BY EPNG**

- 3.1** EPNG will furnish all material as listed on the "Bill of Material" illustrated in Tab 1 of Exhibit "A". EPNG will also furnish water for dust control, hydrostatic testing and tamping from EPNG's Chaco Compressor Station. EPNG will furnish test heads and pigs for hydrostatic testing, sizing pig, corrosion test leads and wire, paint, primer, and coal tar epoxy materials. All other materials and supplies, including form material, reinforcing steel, concrete, transportation (truck and/or pipeline) of water, Fusion Bonded Epoxy Coating for field joints and patch sticks are to be furnished by the Contractor.
- 3.2** Pipe for this project is located at two EPNG Compressor Stations: White Rock and Gallup. Major valves are located at EPNG's Gallup Compressor Station. The remaining items on the Bill of Materials will be available at EPNG's Farmington Warehouse. The Contractor shall load, transport and unload at the site of work all such materials and equipment. Upon receiving such materials and equipment, the Contractor shall assume care for, custody of, and control of it.
- 3.3** Excess pipe and material shall be transported to EPNG's Farmington Warehouse by Contractor.
- 3.4** EPNG will provide the necessary survey control during the course of the job and mark the route of the pipeline with centerline or offset stakes.
- 3.5** EPNG will provide third party environmental compliance inspectors.

## **2.0 GENERAL WORKING SPACE REQUIREMENTS AND RESTRICTIONS**

- 2.1** Working space details are provided in DWG. # 1219.1-1. The new pipeline will be constructed on the Navajo Nation, 20 ft. west of an existing EPNG pipeline. The majority of the construction right of way is 80 ft in width. However, there are 18 different areas along the proposed route that will require special right-of-way restrictions or avoidance measures due to cultural resources and one area that will require right-of-way restriction and avoidance due to biological resources. These areas are identified both on Drwgs. 1219.0-1 thru 1219.0-7 and on the Line List in Section 9 of the Environmental Construction Handbook. Where fences or other special barriers are required, they will be put in place by a third-party cultural resources contractor provided by EPNG. The proposed pipeline does not cross any wetlands.
- 2.2** All personnel and equipment shall remain within the working space requirements at all times.

## **3.0 FURNISHED BY EPNG**

- 3.1** EPNG will furnish all material as listed on the "Bill of Material" illustrated in Tab 1 of Exhibit "A". EPNG will also furnish water for dust control, hydrostatic testing and tamping from EPNG's Chaco Compressor Station. EPNG will furnish test heads and pigs for hydrostatic testing, sizing pig, corrosion test leads and wire, paint, primer, and coal tar epoxy materials. All other materials and supplies, including form material, reinforcing steel, concrete, transportation (truck and/or pipeline) of water, Fusion Bonded Epoxy Coating for field joints and patch sticks are to be furnished by the Contractor.
- 3.2** Pipe for this project is located at two EPNG Compressor Stations: White Rock and Gallup. Major valves are located at EPNG's Gallup Compressor Station. The remaining items on the Bill of Materials will be available at EPNG's Farmington Warehouse. The Contractor shall load, transport and unload at the site of work all such materials and equipment. Upon receiving such materials and equipment, the Contractor shall assume care for, custody of, and control of it.
- 3.3** Excess pipe and material shall be transported to EPNG's Farmington Warehouse by Contractor.
- 3.4** EPNG will provide the necessary survey control during the course of the job and mark the route of the pipeline with centerline or offset stakes.
- 3.5** EPNG will provide third party environmental compliance inspectors.

42 only saved

[illegible]



NEW MEXICO OIL CONSERVATION DIVISION  
RECEIVED

95 DE 17 11 8 52

December 11, 1995

Mr. Chris Eustice  
New Mexico Oil Conservation Division  
2040 South Pacheco Street  
Santa Fe, NM 87504

**Re: Contact Water Ponds at El Paso Natural Gas Company's Chaco Plant**

Mr. Eustice,

As per our conversation on December 5th, EPNG submits this formal request to supplement the information/request faxed to your office on December 4th outlining EPNG's difficulties regarding the contact water ponds at Chaco Plant.

**Summary**

- The two lined, contact water ponds at Chaco Plant are only days away from full capacity as the aeration system was not fully functional until after the end of the 1995 summer (evaporation season).
- Initial estimates to dispose of water run about \$110,000/pond
- EPNG request permission to place the contact water in an existing pond at Chaco. A temporary 12 mil liner will be installed and maintained through June of 1996.

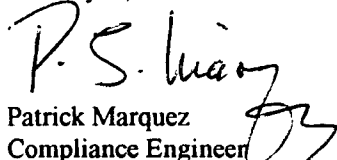
**Proposal**

- Drain both ponds to the temporarily lined pond (see attached map).
- Take advantage, while the ponds are dry, to repair the leaks in the liners as long as the weather permits (as per letter from EPNG David Bays to Roger Anderson - November 17, 1995 ).
- Several contractors are currently using the non-contact water for hydrostatic tests in the area - this contact water will be isolated from all other ponds so that no contractors may access it.
- The contact water from the temporary pond will be placed in the permanent lined ponds as space is made available through evaporation.

This course of action should allow the lined ponds to operate through the winter months while EPNG re-evaluates the capacity and operation of the lined ponds. At that time EPNG will request approval for any change in operation of the ponds.

Please call if you require further information at 505 599 2175.

Thank you,

  
Patrick Marquez  
Compliance Engineer

cc:

S.Miller/D Bays/File: 5212 Regulatory  
B.Yungert/J.Smith

December 4, 1995

Roger Anderson,

Summary

- The two contact lined ponds at Chaco Plant are only days away from full capacity because the aeration system was not fully functional until after the end of the 1995 summer (evaporation season).
- Initial estimates to dispose of water run about \$110,000/pond
- EPNG request permission to place the contact water in an existing unlined pond at Chaco.

Proposal

- Drain both ponds to an existing dry, unlined pond (see attached map). Estimate 50,000 bbls/pond
- Take advantage, while the ponds are dry, to repair the leaks in the liners as long as the weather permits (letter from EPNG David Bays to Roger Anderson - November 17, 1995 ).
- EPNG will fertilize and sample the fill pond to ensure minimum impact from the contact water.
- Several contractors are currently using the non-contact water for hydrostatic tests in the area - this contact water will be isolated from all other ponds so that no contractors may access it.

This should allow the lined ponds to operate through the winter months while EPNG re-evaluates the capacity and operation of the lined ponds.

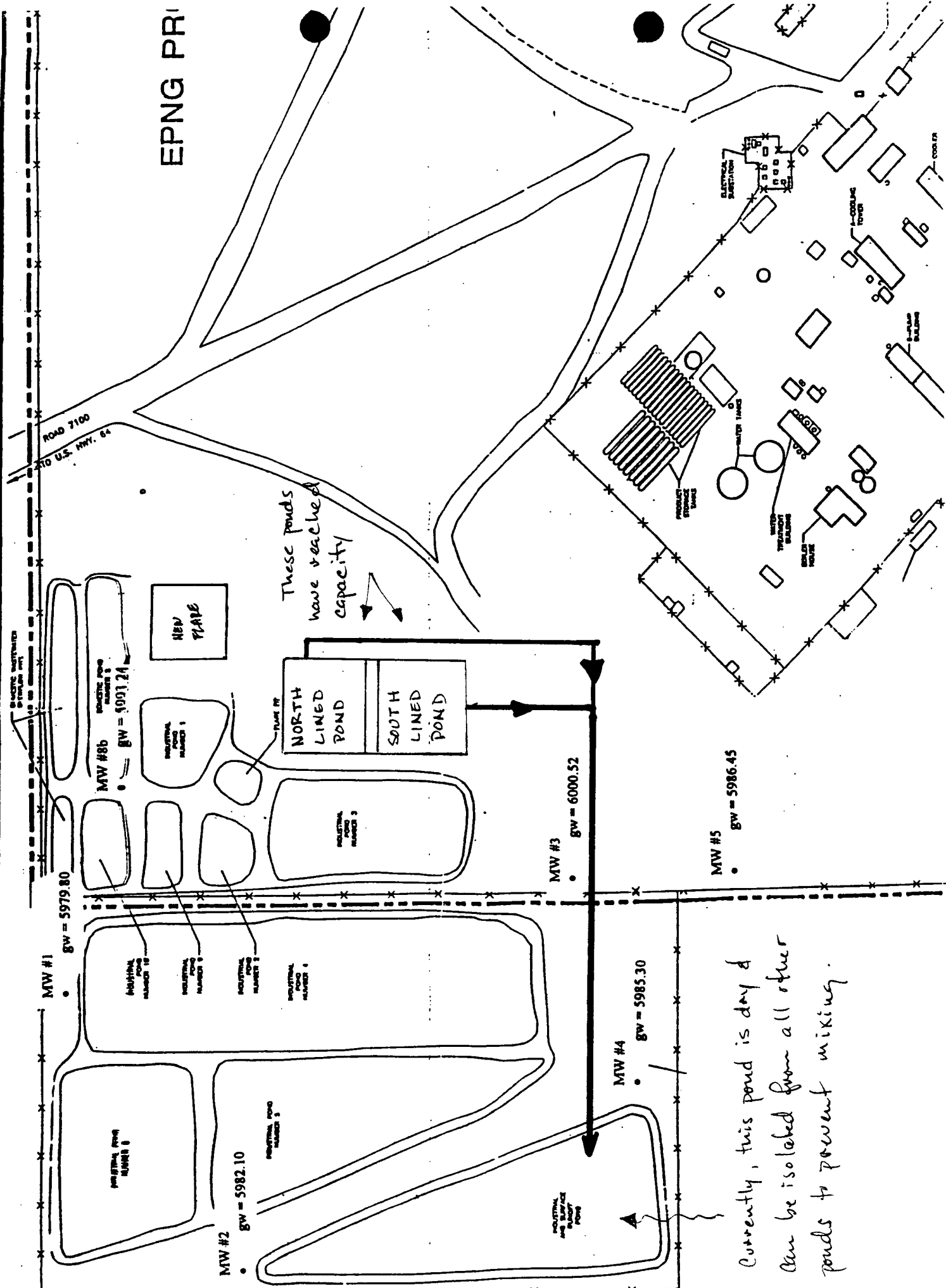
Please call at 505 599 2175 at your earliest convenience.

Thank you,



Patrick Marquez  
Compliance Engineer

EPNG PR



These ponds have reached capacity

Currently, this pond is dry & can be isolated from all other ponds to prevent mixing.





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

New Mexico Ecological Services Field Office  
2105 Osuna NE

Albuquerque, New Mexico 87113  
Phone: (505) 761-4525 Fax: (505) 761-4542

OIL CONSERVATION DIVISION  
RECEIVED  
DEC 8 1995

December 5, 1995

Mr. William J. Lemay  
Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, New Mexico 87505

Dear Mr. Lemay:

This responds to the Energy, Minerals, and Natural Resources Department Oil Conservation Division's public notice dated October 31, 1995, regarding the State of New Mexico's proposal to approve the discharge plan for the applicant listed below.

**(GW-71) - El Paso Natural Gas Company.** The Compliance Engineer has submitted a discharge plan modification for the Chaco Gas Processing Plant located in Section 16, Township 26 North, Range 12 West, San Juan County, New Mexico. The modification consists of adding a replacement unit to the facility. Approximately 2405 gallons per day of produced water will be stored in an above ground double lined evaporation pond equipped with leak detection.

The U.S. Fish and Wildlife Service (Service) recommends the use of excluding technology (nets, fences, enclosed tanks, closed-forced evaporation systems, etc.) to prevent migratory bird and other wildlife access to any ponds or lagoons that contain toxic chemicals. We make this recommendation because produced water has the potential to pose a risk to the health of migratory birds.

The composition of produced waters from this and other areas has been known to contain chemicals in toxic quantities (Carey et al. 1992, Fucik 1992, Jacobs et al. 1992, Rogers et al. 1992, Shepherd et al. 1992, Stephenson 1992). The Service's primary concern is that birds that land on waterbodies with an oil sheen have the potential to contaminate their eggs during nesting season. Birkhead et al. (1973) reported that petroleum pollutants carried to the nest on breast feathers, feet, or nesting materials caused reduced hatchability of contaminated eggs. Albers (1977) and Hoffman (1978) showed that as little as 1 to 10 microliters of crude or refined oil topically applied to eggs of various bird species was embryotoxic or teratogenic. We recommend that the Oil Conservation Division or the applicant demonstrate that the pond will have no oil sheen and continue periodic testing to characterize the water quality and determine if any bioaccumulation or ecological risks seem imminent.

Mr. William J. Lemay

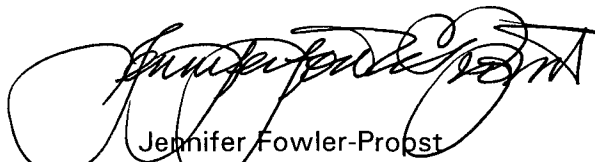
2

During flight, migratory birds may not distinguish between a pond or lagoon from a natural waterbody. Therefore, rather than allow migratory birds access to an attractive nuisance waterbody, we recommend that ponds and lagoons be constructed in a manner that is "bird-free" (i.e., netted), or the applicant demonstrate that the pond or lagoon is "bird-safe" (i.e., can meet New Mexico general water quality standards 1102B, 1102F, and 3101K).

The Service would rather solve the problem of migratory bird access to contaminated ponds and lagoons than take enforcement actions, which are expensive and disruptive to legitimate mineral extraction and production activities. The Migratory Bird Treaty Act (MBTA) makes it unlawful for anyone at anytime or in any manner to take (i.e., pursue, hunt, take, capture, kill, transport, or possess) any migratory bird unless authorized by a permit issued by the Department of the Interior. The courts have interpreted "illegal take" to include accidental poisoning or accumulation of harmful concentrations of contaminants by migratory birds, even if the contamination event was accidental or the perpetrator was unaware of the fact that his/her actions (or failure to take action) could ultimately prove harmful to migratory birds. The liability provisions of the MBTA preclude the necessity of proving intent and permits criminal prosecution of persons, associations, partnerships, or corporations that inadvertently or intentionally kill or illegally take one or more migratory birds. Therefore, if the creation and operation of a pond or lagoon results in migratory bird death, the operators may be held liable under the enforcement provisions of the MBTA.

Thank you for the opportunity to review and comment on this discharge plan application. If you have any questions, please contact Joel D. Lusk at (505) 761-4525.

Sincerely,



Jennifer Fowler-Probst  
Field Supervisor

cc:

Chief, New Mexico Environment Department, Surface Water Quality Bureau, Santa Fe, New Mexico

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico

Senior Resident Agent, U.S. Fish and Wildlife Service, Division of Law Enforcement, Albuquerque, New Mexico

## References Cited

- Albers, P.H. 1977. *Effects of external application of fuel oil on hatchability of mallard eggs*. Pages 158-173 in *Fate and Effects of Petroleum Hydrocarbons in Marine Ecosystems and Organisms*, D.A. Wolfe, Ed., Pergamon Press, New York, New York, USA.
- Birkhead, T.R., C. Lloyd, and P. Corkhill. 1973. *Oiled seabirds successfully cleaning their plumage*. *Br Birds* 66:535-543.
- Carey, J., A. Zaidi, and J. Ribo. 1992. *Specific toxic organics in produced waters from in-situ heavy oil recovery operations in western Canada*. Pages 133-150 in *Produced Water: Technological/Environmental Issues and Solutions*, J.P. Ray and F.R. Engelhardt, eds., Plenum Publishing Corp., New York, New York, USA.
- Fucik, K.W. 1992. *Toxicity identification and characteristics of produced water discharges from Colorado and Wyoming*. Pages 187-198 in *Produced Water: Technological/Environmental Issues and Solutions*, J.P. Ray and F.R. Engelhardt, eds., Plenum Publishing Corp., New York, New York, USA.
- Jacobs, R.P.W.M., R.O.H. Grant, J. Kwant, J.M. Marquenie, and E. Mentzer. 1992. *The composition of produced water from Shell operated oil and gas production in the North Sea*. Pages 14-21 in *Produced Water: Technological/Environmental Issues and Solutions*, J.P. Ray and F.R. Engelhardt, eds., Plenum Publishing Corp., New York, New York, USA.
- Hoffman, D.J. 1978. *Embryotoxic effects of crude oil in mallard ducks and chicks*. *Toxicology and Applied Pharmacology* 46:183-191.
- Rogers, J.L., R.T. Hicks, B. Shaw, and J. Jensen. 1992. *Procedure for development of contingency plans to mitigate produced water releases on BLM lands*. Pages 35-44 in *Produced Water: Technological/Environmental Issues and Solutions*, J.P. Ray and F.R. Engelhardt, eds., Plenum Publishing Corp., New York, New York, USA.
- Shepherd, M.C., F.L. Shore, S.K. Mertens, and J.S. Gibson. 1992. *Characterization of produced waters from natural gas production and storage operations: Regulatory analysis of a complex matrix*. Pages 163-173 in *Produced Water: Technological/Environmental Issues and Solutions*, J.P. Ray and F.R. Engelhardt, eds., Plenum Publishing Corp., New York, New York, USA.
- Stephenson, M.T. 1992. *A survey of produced water studies*. Pages 1-11 in *Produced Water: Technological/Environmental Issues and Solutions*, J.P. Ray and F.R. Engelhardt, eds., Plenum Publishing Corp., New York, New York, USA.

# NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON  
GOVERNOR

JENNIFER A. SALISBURY  
CABINET SECRETARY

1000 RIO BRAZOS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-6178 FAX: (505) 334-6170

Certified: P-987-892-159

December 6, 1995

El Paso Natural Gas Company  
Att. Patrick Marquez  
Compliance Engineer  
PO Box 4990  
Farmington NM 87499

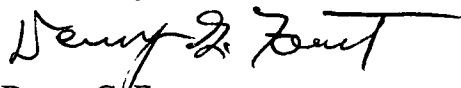
RE: Over spray pooling at the lined contact water ponds EPNG Chaco Plant

Dear Mr. Marquez:

During a visit to observe the closure of the abandoned earthen contact water ponds on November 30, 1995, over spray from the lined contact water ponds was observed pooling at the base of the pond containment berms. We specifically discussed this matter and the need for an immediate solution. Over spray from the contact water ponds is to be limited always and never allowed to pool on or run off the berms. Adjustments must be made with the anemometer or pump pressure to eliminate over spray. Plant personnel are responsible for either making these adjustments when over spray occurs or shutting down the system until qualified personnel can make the necessary adjustments.

Hopefully there will be no recurrence of the over spray problem if the anemometer is adjusted properly and is operating. Please contact this office at 334-6178 if you have questions.

Yours truly,



Denny G. Foust  
Environmental Geologist

DF/sh

xc: Chris Eustice  
Environmental File  
DGF File



P. O. Box 4990  
FARMINGTON, NEW MEXICO 87499

November 17, 1995

Registered Mail - Receipt No. P 645 521 867

Mr. Roger Anderson  
New Mexico Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, NM 87505

Dear Mr. Anderson:

During October 1995, El Paso Natural Gas Co. (EPNG) conducted integrity testing on the liners of four ponds in the San Juan Basin. The locations tested are the Ballard Separator pond, the Kutz Separator Pond, and the two contact wastewater ponds at the Chaco Plant. The testing was conducted by Leak Location Services, Inc. of San Antonio, Texas, using an electrical continuity test probe.

Leaks were found in all four of the pond liners. In the Ballard pond we identified 8 leaks; in the Kutz pond, 19 leaks; in the north Chaco pond, 15 leaks; and in the south Chaco pond, 9 leaks. Almost all of the leaks appeared to be in straight lines, indicating leaking seams.

Attached are the work plans we have developed to repair the liners. Please have your staff review these plans, and provide any comments you may have. For any additional information needed, please contact me at the above address, or at (505) 599-2256.

Sincerely yours,

A handwritten signature in cursive script that reads 'David Bays'.

David Bays, REM  
Sr. Environmental Scientist

cc: Denny Foust, NMOCD - Aztec  
David Hall  
S. D. Miller/P. J. Marquez/R. D. Cosby

# **Chaco Plant Contact Wastewater Ponds Liner Repair Work Plan**

## **1. Introduction**

During liner integrity testing conducted on the Chaco Plant contact wastewater pond liners, several leaks were identified. This work plan identifies the steps to be followed in making the necessary repairs to those liners.

The liners were tested using an electrical conductivity probe. In order for this type of test method to work properly, it was necessary to inject approximately 20,000 gallons of water into the interstitial space between the upper and lower liners. This water allowed a complete electrical circuit between two probes, one placed in the pond and the other placed in the leak detection zone. When a pin hole was encountered, current flowed between the two probes and tripped an audible alarm to indicate the location of the leak.

## **2. Leak Detection System Monitoring**

The first step of the repair process is removal of the water from the interstitial space. The leak detection monitoring wells, located immediately adjacent to each pond will be checked every other week to determine if free liquids are present. A small electric pump will be used to remove any liquids found, and to pump those liquids back into the lined ponds. Biweekly inspections will continue until the beginning of repairs on the liners.

## **3. Leak Repair Process**

EPNG proposes to start actual repairs to the liners in May, 1996. It is prudent to delay repairs until the warm weather months, since it is very difficult to ensure a proper seal on the repair material when the liner is too cold. The repairs will be done in several phases. Once construction of the temporary holding pond begins (Paragraph 3.1, below), EPNG estimates that the total repair project can be completed within six weeks.

### **3.1. Temporary Holding Pond**

The first phase of the repairs will be to construct a temporary pond to hold excess water from the large wastewater ponds. The temporary pond will be lined with a 10 mil thick hypalon liner, and sized to contain approximately one-half of the water volume from one of the permanent ponds.

### **3.2. North Pond Wastewater Transfer**

Using a high volume oil field blender pump, (100 barrels per minute capacity) water will be transferred from the north wastewater pond to the south wastewater pond, until the south pond is full. The remaining volume will then be transferred into the temporary pond.

### **3.3 Liner Repair**

Each leak point will be located, based on data from the leak survey. The area around each leak will be thoroughly cleaned using a solvent that is compatible with the liner system. A repair patch will be installed over the leak using a system which extrudes additional plastic into the repair joint, making a "welded" seam. Repair patches will not be attached by using a glue joint only. The minimum sized repair patch will be 18 inches by 18 inches. Larger patches will be used as necessary, depending on the size and location of the leak.

Where patches are placed over existing seams, the seam will first be sanded to a smooth surface. This will prevent attempting to weld the repair patch over an uneven surface.

### **3.4 Testing**

All seams around each repair patch will be vacuum tested to ensure a proper seal around all edges of the patch.

### **3.5 South Pond Wastewater Transfer**

Again using the high volume blender pump, all wastewater from the south pond will be transferred back to the north pond. The liner repair and testing procedures as described above will then be repeated on the south pond.

### **3.6 Temporary Pond Closure**

Finally, the stored water from the temporary pond will be transferred back into the two contact wastewater ponds. Once emptied, the temporary pond will be allowed to air dry, the liner will be destroyed in place using a backhoe, and the area will be leveled to original grade.

# **Kutz Separator Wastewater Pond Liner Repair Work Plan**

## **1. Introduction**

During liner integrity testing conducted on the Kutz Separator wastewater pond liner, several leaks were identified. This work plan identifies the steps to be followed in making the necessary repairs to that liner.

The liner was tested using an electrical conductivity probe. In order for this type of test method to work properly, it was necessary to inject approximately 5,000 gallons of water into the interstitial space between the upper and lower liners. This water allowed a complete electrical circuit between two probes, one placed in the pond and the other placed in the leak detection zone. When a pin hole was encountered, current flowed between the two probes and tripped an audible alarm to indicate the location of the leak.

## **2. Leak Detection System Monitoring**

The first step of the repair process is removal of the water from the interstitial space. The leak detection monitoring well, located immediately adjacent to the pond will be checked every other week to determine if free liquids are present. A small electric pump will be used to remove any liquids found, and pump those liquids back into the lined pond. Biweekly inspections will continue until the beginning of repairs on the liner.

## **3. Leak Repair Process**

EPNG proposes to both repair the existing liner, and to construct an additional lined pond adjacent to the existing pond. We currently plan to start the project in February, 1996. In anticipation of the construction activity, EPNG will submit an application for a Discharge Plan permit for the facility during January, 1996. The construction and repairs will be done in several phases.

### **3.1 Discharge Plan**

The first step will be the submission of a Discharge Plan to obtain NMOCD approval for the expansion of the wastewater handling capacity of the facility. The application will fully identify existing equipment and operations, the planned additional wastewater capacity, and all waste streams handled at the location.



### **3.2 New Pond Construction**

Following NMOCD approval, a new pond will be constructed north of the existing lined pond. The new cell will be 120 feet by 120 feet by 4 feet deep. It will be double lined with a leak detection system. Design criteria and installation drawings will be furnished with the Discharge Plan application.

The new cell liner will be tested for leaks prior to use. Once the liner integrity has been confirmed, all water from the existing pond will be transferred into the new pond, using a high volume oil field blender pump, (100 barrels per minute capacity).

### **3.3 Liner Repair**

Each leak point in the existing pond will be identified based on data from the leak survey. An area around each leak will be thoroughly cleaned, using a solvent that is compatible with the liner system. A repair patch will then be installed over the leak using a system which extrudes additional plastic into the repair joint, making a "welded" seam. Repair patches will not be attached by using a glue joint only. The minimum sized repair patch will be 18 inches by 18 inches. Larger patches will be used as necessary, depending on the size and location of the leak.

Where patches are placed over existing seams, the seam will first be sanded to a smooth surface. This will prevent attempting to weld the repair patch over an uneven surface.

### **3.4 Testing**

All seams around each repair patch will be vacuum tested to ensure a proper seal around all edges of the patch.

# **Ballard Separator Wastewater Pond Liner Repair Work Plan**

## **1. Introduction**

During liner integrity testing conducted on the Ballard Separator wastewater pond liner, several leaks were identified. This work plan identifies the steps to be followed in making the necessary repairs to that liner.

The liner was tested using an electrical conductivity probe. In order for this type of test method to work properly, it was necessary to inject approximately 3,500 gallons of water into the interstitial space between the upper and lower liners. This water allowed a complete electrical circuit between two probes, one placed in the pond and the other placed in the leak detection zone. When a pin hole was encountered, current flowed between the two probes and tripped an audible alarm to indicate the location of the leak.

## **2. Leak Detection System Monitoring**

The first step of the repair process is removal of the water from the interstitial space. The leak detection monitoring well, located immediately adjacent to the pond will be checked every other week to determine if free liquids are present. A small electric pump will be used to remove any liquids found, and pump those liquids back into the lined pond. Biweekly inspections will continue until the beginning of repairs on the liner.

## **3. Leak Repair Process**

EPNG proposes to both repair the existing liner, and to construct an additional lined pond adjacent to the existing pond. We currently plan to start the project in February, 1996. In anticipation of the construction activity, EPNG will submit an application for a Discharge Plan permit for the facility during January, 1996. The construction and repairs will be done in several phases.

### **3.1 Discharge Plan**

The first step will be the submission of a Discharge Plan to obtain NMOCD approval for the expansion of the wastewater handling capacity of the facility. The application will fully identify existing equipment and operations, the planned additional wastewater capacity, and all waste streams handled at the location.

### **3.2 New Pond Construction**

Following NMOCD approval, a new pond will be constructed east of the existing lined pond. The new cell will be 120 feet by 120 feet by 4 feet deep. It will be double lined with a leak detection system. Design criteria and installation drawings will be furnished with the Discharge Plan application.

The new cell liner will be tested for leaks prior to use. Once the liner integrity has been confirmed, all water from the existing pond will be transferred into the new pond, using a high volume oil field blender pump, (100 barrels per minute capacity).

### **3.3 Liner Repair**

Each leak point will be located based on data from the leak survey. An area around each leak will be thoroughly cleaned, using a solvent that is compatible with the liner system. A repair patch will then be installed over the leak using a system which extrudes additional plastic into the repair joint, making a "welded" seam. Repair patches will not be attached by using a glue joint only. The minimum sized repair patch will be 18 inches by 18 inches. Larger patches will be used as necessary, depending on the size and location of the leak.

Where patches are placed over existing seams, the seam will first be sanded to a smooth surface. This will prevent attempting to weld the repair patch over an uneven surface.

### **3.4 Testing**

All seams around each repair patch will be vacuum tested to ensure a proper seal around all edges of the patch.

# NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

2040 S. Pacheco  
Santa Fe, New Mexico 87505

November 17, 1995

### CERTIFIED MAIL

RETURN RECEIPT NO. Z-765-962-515

Mr. Patrick Marquez  
Compliance Engineer  
El Paso Natural Gas Company  
P.O. Box 4990  
Farmington, New Mexico 87499

**RE: PIT INVESTIGATION REPORT  
CHACO GAS PLANT, GW-71  
SAN JUAN COUNTY, NEW MEXICO**

Dear Mr. Marquez:

The New Mexico Oil Conservation Division (OCD) has reviewed El Paso Natural Gas Company's (EPNG) November 16, 1995 "REQUEST APPROVAL FOR CLOSURE OF CHACO INDUSTRIAL PONDS AND FLARE PIT". This document contains the results of EPNG's investigation of the extent of contamination related to the former use of the unlined flare pit and industrial ponds #1 and #2. The document also contains EPNG's proposed remediation/closure plan for these former disposal areas.

The above referenced remediation/closure plan is approved with the following conditions:

1. EPNG will provide the OCD with a report on the remediation/closure activities by February 2, 1996.
2. Since monitor well MW-1 is offgradient to monitor well MW-8b, the OCD requests that EPNG submit a work plan to the OCD by February 2, 1995 for additional delineation of the extent of ground water contamination.
3. Monitor wells MW-1 and MW-8b will be sampled on a semi-annual basis. Ground water from these wells be sampled and analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), polynuclear aromatic hydrocarbons and heavy metals using EPA approved methods.
4. All documents submitted to the OCD for approval will be submitted to the OCD Santa Fe Office with copies provided to the OCD Aztec District Office.

Mr. Patrick Marquez  
October 13, 1995  
Page 2

Please be advised that OCD approval does not relieve EPNG of liability if the remediation/closure activities fail to adequately remediate or contain contamination related to EPNG's activities. In addition, OCD approval does not relieve EPNG of responsibility for compliance with any other federal, state and local laws and/or regulations.

If you have any questions, please contact me at (505) 827-7154.

Sincerely,



William C. Olson  
Hydrogeologist  
Environmental Bureau

xc: OCD Aztec District Office

Z 765 962 515



**Receipt for  
Certified Mail**

No Insurance Coverage Provided  
Do not use for International Mail  
(See Reverse)

PS Form 3800, March 1993

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

Fold at line over top of envelope to the right of the return address



OIL CONSERVATION DIVISION  
RECEIVED

1995 NOV 24 AM 8 52

November 16, 1995

**RECEIVED**

NOV 29 1995

Environmental Bureau  
Oil Conservation Division

Mr. Bill Olson  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504

**Re: Request Approval for Closure of Chaco Industrial Ponds and Flare Pit**

Dear Mr. Olson:

EPNG has completed the investigation of the Industrial Ponds and Flare Pit according to the EPNG's Work Plan for Closure. Based on the information gained, EPNG request approval for closure of the subject ponds.

#### **Investigation**

Some generalities existed throughout the investigation: 1) As outlined in the work plan, one source sample was taken approximately five feet beneath the surface of each pond and each was visibly contaminated 2) the perched aquifer was encountered at all but one bore hole (#8) at a depth of eight to fifteen feet from an estimated datum 3) clay was first reported on all drilling logs at depths ranging from fifteen to twenty feet and 4) all drilling logs recorded dry soil immediately beneath the perched aquifer to depth of bore.

As you recall, seven bore locations were drilled to establish the extent of contamination while one monitor well installation was scheduled to monitor the perched aquifer quality immediately down gradient of the ponds. As stated above, the perched aquifer was encountered at locations 1-7 but not at location #8. Soil samples were taken at the eighth location and the monitor well was installed just south of #8 and is referred to as 8b (see site sketch). The absence of ground water at location #8 would indicate that ground water is not moving northward as expected.

Ground water movement has been re-calculated using the latest ground water data and is shown to be moving northwest rather than just east of north as previously believed - see ground water elevation map.

#### **Conclusions**

The data gathered during the investigation is summarized in Tables 1 & 2 (Please note: metals analyses are reported as Totals - divide all values by 20 to get a TCLP equivalent). As expected, the source and shallow (1-10 ft) soil samples showed the highest levels of TPH while the deeper analyses show low or no levels of TPH or BTEX. This along with the absence of water at depths below the recorded clay layer would suggest that the contamination and perched aquifer are confined to the shallow depths of the pond area.

The analyses from monitor well #8b show the level of benzene in the perched aquifer immediately (< 30 ft) north of Industrial Pond #1 to be 29.5 parts per billion. This result is not surprising considering the proximity of MW8b to this pond. The historical data from the existing monitor wells and the depth at which each bore hole "cleaned-up" support EPNG's belief that contaminants are not moving offsite in spite of this data point. This is confirmed by the absence of BTEX in monitor well #1 which is directly down gradient of the subject ponds.

### **Proposed Closure Plan**

Based on the data presented in this document and the historical monitor well data provided to your office in October of this year, EPNG proposes fill the ponds with a mixture of earth and manure. The manure will be added to promote the natural biodegradation of the shallow layer of contamination identified by this investigation. Each pond will be capped and contoured with a 6-8" layer of clay to prevent pooling and infiltration of stormwater. EPNG will continue to sample the existing monitor wells as instructed by The NMOCD (Water Quality Monitoring - NMOCD to Patrick Marquez, October 13, 1995).

Further justification for this proposal are as follows:

- Monitor well analyses show that no hydrocarbon constituents have moved off-site via the subsurface water generated by the operation of the ponds.

The analyses provided in the Annual Report show the absence of Benzene, Toluene, Ethylbenzene, Xylene in monitor wells 1-7.

- Presence of 50+ feet of low permeability shale is present above the regional aquifer at the Plant site.

Driller's log show that the Plant site is resting on less than fifty feet of sandy deposits above the lower shale unit of the Nacimiento Formation. Fifteen to Twenty feet of sandstone was encountered below the shale layer. Log provided under Tab 3.

- Depth to ground water is approximately 120 feet.

Driller's log reports that water was encountered at a depth of 120 feet in the Ojo Alamo Formation. No other water bearing zones were encountered to a total depth of 505 feet.

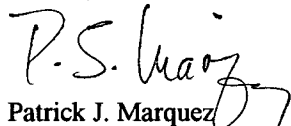
- All contact water is and will continue to go to the new lined ponds as directed by NMOCD.

### **Attachments**

- Tab 1 A water table elevation map for all monitor wells at this facility.
- Tab 2 The geologic log for each boring and the monitor well and the as built well completion diagram for each monitor well.
- Tab 3 Driller's Log showing soil classifications to a depth of 500+ feet.

EPNG respectfully request approval to close the Chaco Ponds as described above. Should you require more information, please do not hesitate to call at 505-599-2175.

Thank you,

  
Patrick J. Marquez  
Compliance Engineer

cc:

Denny Foutz NMOCD- Aztec  
Sandra Miller/David Bays/File: 5212

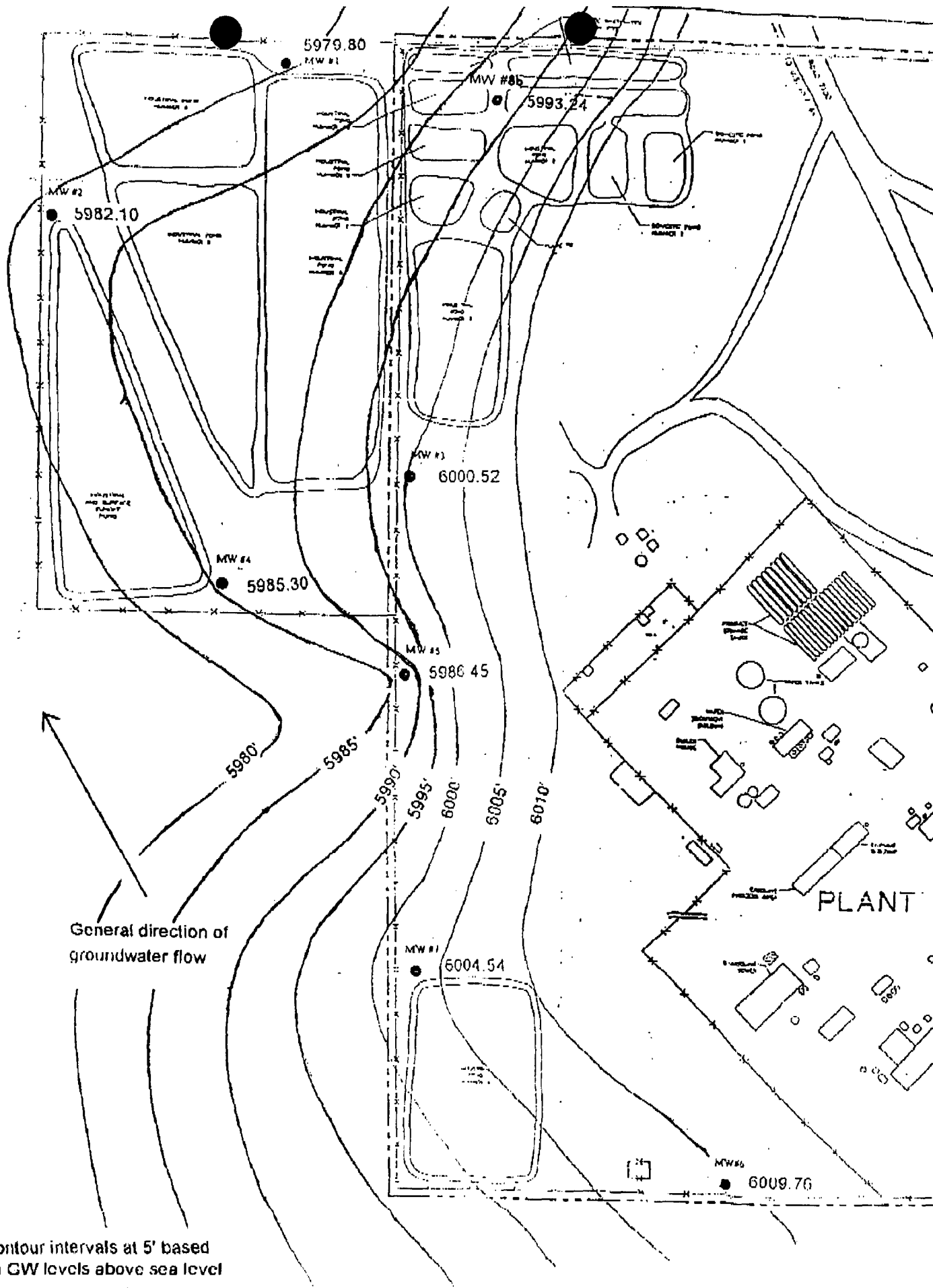
Table 1

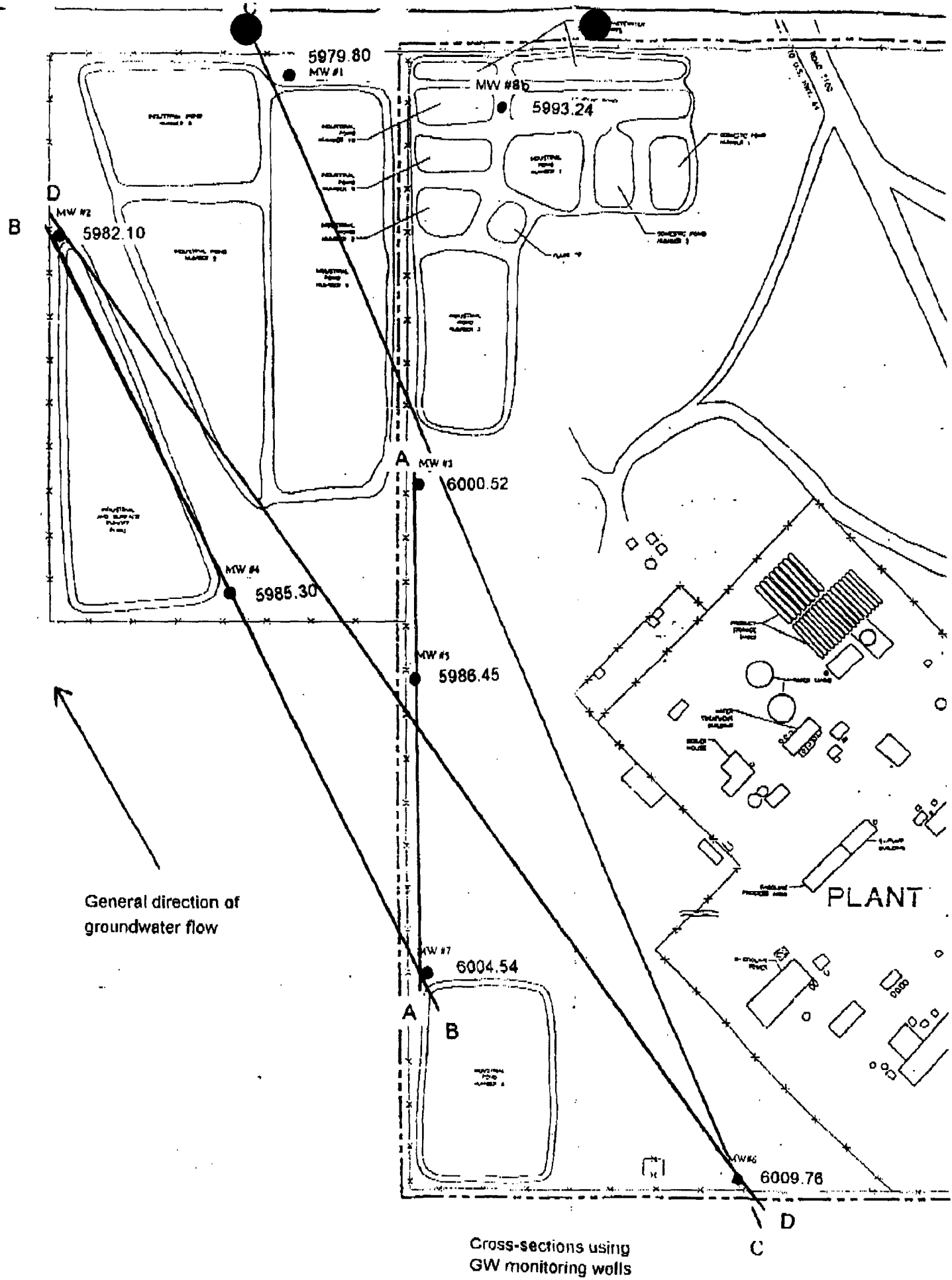
		Chaco Pond Investigation															
Analyte/Bore Hole Location		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8A	8b
Sample Number		951048	951049	951050	951051	951058	951059	951046	951047	951060	951061	951064	951065	951062	951063	951066	951067
Depth (ft)		5-7	30-32	10-12	30-32	5-7	30-32	13-15	20-22	10-12	30-32	10-12	30-32	10-12	30-32	40-42	15-17
Total Metals (EPA 6010) mg/kg																	
Arsenic	3	2	ND	61	1	6	3	3	ND	3	3	1	6	ND	8	4	
Barium	80	50	20	40	80	10	10	50	30	20	50	20	20	40	40	ND	20
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	4	9	1	3	3	4	1	3	23	11	6	8	8	7	2	2	1
Lead	4.6	12	2.3	4.5	4.3	5.2	2	18	3.3	14	3.4	6.1	3.1	9.3	3.1	3.1	2.9
Mercury (7471)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Source BTEX (8020) mg/kg																	
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	4.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Total BTEX	1.5	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	8.6	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
TPH (418.1 mg/kg)	2068	<10	<10	<10	4300	<10	<10	<10	<10	38400	<10	28100	16	17500	<10	<10	<10
"Source" Sample?	Source							Source		Source							
High PID *	*	Bottom	*	Bottom	*	Bottom	Bottom	None	Bottom	*	Bottom	*	Bottom	*	Bottom	Bottom	MW#8
Monitor Well Identification		1	2	3	4	5	6	7	8b								
MW Elevation -Top of Pipe (ft)		6002.70	5997.40	6011.68	6004.44	6011.07	6021.43	6013.79	6010.63								
Sept. 21, 1995 Static Levels (ft)		22.90	15.30	11.16	19.14	24.62	11.67	9.25	17.39								
Ground Water Elevation (ft)		5979.80	5982.10	6000.52	5985.30	5986.45	6009.76	6004.54	5993.24								



## Table 2

Monitor Well 8b									
Sample #951068									
Total Metals	Result	Units	Polynuclear Aromatics	Result	Units	Cations/Anions	Result	Units	
Aluminum	2.8	mg/l	Naphthalene	ND	ug/L	pH	8.02	umhos	
Arsenic	0.05	mg/l	Acenaphthylene	ND	ug/L	Alkalinity as CO3	0	ppm	
Barium	0.1	mg/l	1-Methylnaphthalene	10.5	ug/L	Alkalinity as HCO3	780	ppm	
Boron	0.4	mg/l	2-Methylnaphthalene	6J	ug/L	Calcium as Ca	13	ppm	
Cadmium	ND	mg/l	Acenaphthene	ND	ug/L	Magnesium and Mg	4	ppm	
Chromium	ND	mg/l	Fluorene	3.6	ug/L	Total Hardness as CaCO3	49	ppm	
Cobalt	ND	mg/l	Phenanthrene	ND	ug/L	Chloride as Cl	158	ppm	
Copper	ND	mg/l	Anthracene	ND	ug/L	Sulfate as SO4	289	ppm	
Iron	2.2	mg/l	Fluoranthene	ND	ug/L	Fluoride as F	2.2	ppm	
Lead	ND	mg/l	Pyrene	ND	ug/L	Potassium as K	0.65	ppm	
Manganese	0.25	mg/l	Benzo(a)anthracene	ND	ug/L	Sodium	553	ppm	
Mercury	ND	mg/l	Chrysene	ND	ug/L	Total dissolved Solids	1424	ppm	
Molybdenum	ND	mg/l	Benzo(b)fluoranthene	ND	ug/L	Conductivity	2280	umhos	
Nickel	ND	mg/l	Benzo(a)fluoranthene	ND	ug/L	Nitrate as NO3-N	<0.1	ppm	
Selenium	ND	mg/l	Benzo(a)pyrene	ND	ug/L	Phosphate as PO4	4.2	ppm	
Silver	ND	mg/l	Dibenzo(a,h)anthracene	ND	ug/L				
Zinc	0.07	mg/l	Benzo(g,h,i)perylene	ND	ug/L				
BTEX (8020)			Indeno(1,2,3-c,d)pyrene	ND	ug/L				
Benzene	29.5	ppb							
Toluene	<2.5	ppb							
Ethyl Benzene	<2.5	ppb							
Total Xylenes	<7.5	ppb							
ND = Not Detected									
J = Estimate value. Below requested detection limits									





## CHACO PLANT MONITORING WELLS

WELL	Water Level
MW # 1	5979.80
MW # 2	5982.10
MW # 3	6000.52
MW # 4	5985.30
MW # 5	5986.45
MW # 6	6009.76
MW # 7	6004.54
MW # 8	5993.24

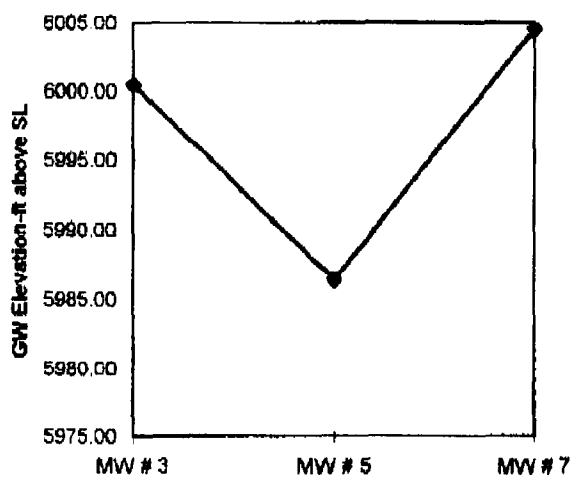
Cross-section AA	
MW # 3	6000.52
MW # 5	5986.45
MW # 7	6004.54

Cross-section BB	
MW # 2	5982.10
MW # 4	5985.30
MW # 7	6004.54

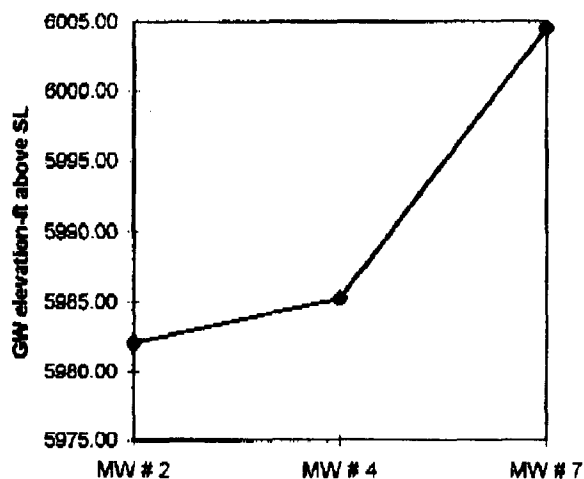
Cross-section CC	
MW # 1	5979.80
MW # 3	6000.52
MW # 6	6009.76

Cross-section DD	
MW # 2	5982.10
MW # 5	5986.45
MW # 6	6009.76

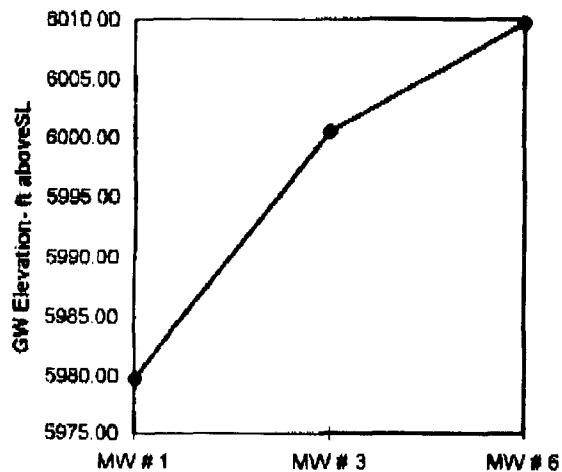
Cross-section AA



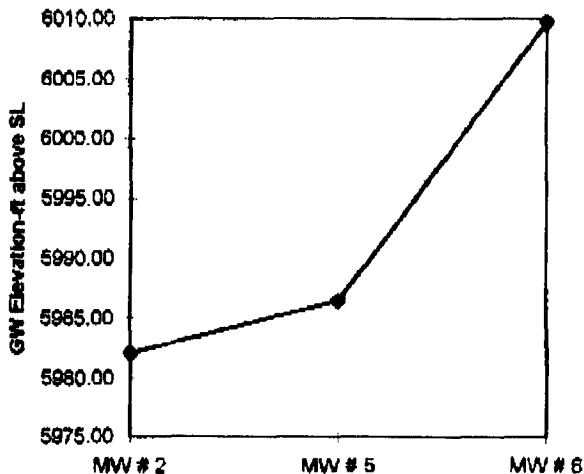
Cross-section BB

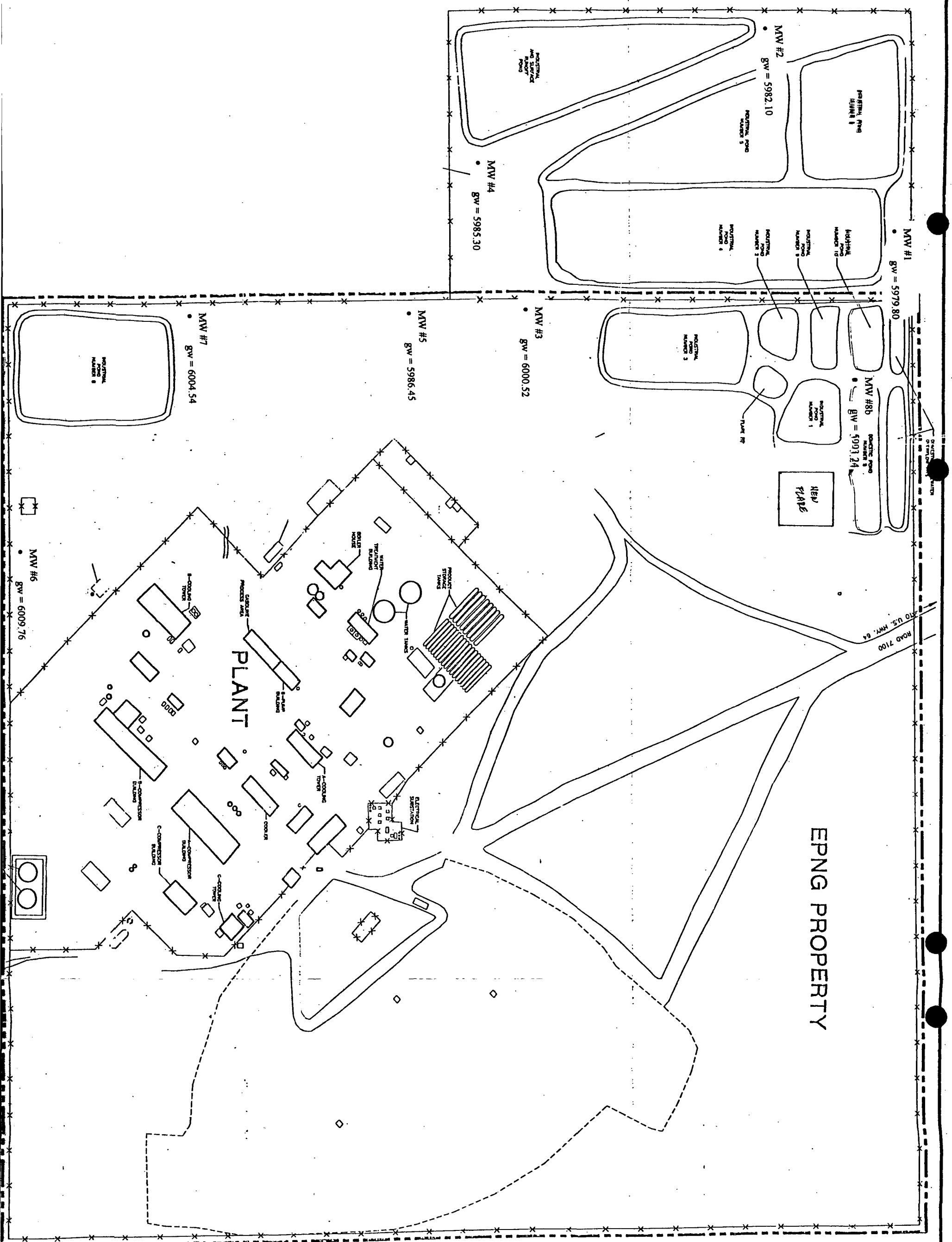


Cross-section CC



Cross-section DD





## **Record of Subsurface Exploration**

# RECORD OF SUBSURFACE EXPLORATION

Burlington Environmental Inc.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 326-2262 FAX (505) 326-2366

Borehole # MW - 1  
Well # MW - 1  
Page 1 of 1

Project Name EPNG - Chaco Plant  
Project Number 10942 Phase 2001 / 77  
Project Location San Juan County, NM

Elevation \_\_\_\_\_  
Borehole Location MW - 1  
GWL Depth 15'  
Logged By Scott Pope  
Drilled By Rodgers Inc.  
Date/Time Started 9-29-93 / 0830  
Date/Time Completed 9-29-93 / 1000

Well Logged By Scott Pope  
Personnel On-Site Scott Pope  
Contractors On-Site Rodgers Inc.  
Client Personnel On-Site Gerry Garibay

Drilling Method HSA 6 1/4" ID  
Air Monitoring Method HNU, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ BH S			Drilling Conditions & Blow Counts
0										
5	1	5	SS 24	Brown SAND with Silt, fine-grained Sand, moist, loose.	SM		0	0	0	
10	2	10	SS 24	Brown SAND with Silt, fine-medium grained, trace Clay, moist, loose.			0	0	0	- Noted wet cuttings at 10'.
15	3	15	SS 24	Brown SAND, medium-coarse grained, trace Clay, trace Silt, moist, medium dense.		13.0	0	0	0	- Water estimated at 15'.
20	4	20	SS 9	Brown SAND, med.-coarse Sand, trace Silt, sporadic cementation. Noted coal fragments, moist, very dense, possibly cemented.	SW		0	0	0	- Sample refusal at 9'. - Noted saturated cuttings at 20.5'. Noted clay in cuttings.
25	5	25	SS 6	Brown cemented SAND, med.-coarse grained Sand, trace fine Gravel, some oxidstains, moist, very dense.			0	0	0	- Sample refusal at 6'. *
				TOB - 23.8'						
30										
35										
40										

Comments: \* Let sit to see if water would accumulate. Had 8" of water in augers Discussed with Gerry Garibay. Will set well  
at 23'.

Geologist Signature

*Scott T. Pope*

# RECORD OF SUBSURFACE EXPLORATION

Burlington Environmental Inc.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 328-2282 FAX (505) 328-2388

Borehole # MW - 2  
Well # MW - 2  
Page 1 of 1

Project Name EPNG - Chaco Plant  
Project Number 10942 Phase 2001 / 77  
Project Location San Juan County, NM

Elevation \_\_\_\_\_  
Borehole Location MW - 2  
GWL Depth 15'  
Logged By Scott Pope  
Drilled By Rodgers Inc.  
Date/Time Started 9-30-93 / 1415  
Date/Time Completed 9-30-93 / 1545

Well Logged By Scott Pope  
Personnel On-Site Scott Pope  
Contractors On-Site Rodgers Inc.  
Client Personnel On-Site Kris Sinclair

Drilling Method HSA 6 1/4" ID  
Air Monitoring Method HNU, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (Inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (Feet)	Air Monitoring Units: MDU BZ BH S			Drilling Conditions & Blow Counts
0										
5	1	5	SS 24	Brown-Gray CLAY with Silt and fine Sand, evaporate filling of voids, roots, Organic Matter, oxidizing, moist, very stiff.	CL		0	0	0	- Tight drilling.
10	2	10	SS 18	Lt. Brown Silty SAND, fine-medium grained, trace Clay, oxidizing, moist, dense.	SM	8.0	0	0	0	- Sample refusal at 18". Tight drilling continues.
15	3	15	SS 6	Brown-Lt. Brown SAND, coarse grained, trace Silt, trace coarse gravel, moist, very dense, cemented fragments.		13.0	0	0	0	- Tight drilling continues. - Sample Refusal at 6".
20	4	20	SS 6	Same as above. Saturated.	SW		0	0	0	- Sample Refusal at 6".
25	5	25	SS 6	Same as above. Sample was moist at bottom. TOB - 25'			0	0	0	- Sample Refusal at 6". Seemed to be getting out of saturated zone. Will set well at 25'.
30										
35										
40										

Comments:

Geologist Signature

*Scott T. Pope*



# RECORD OF SUBSURFACE EXPLORATION

**Burlington Environmental Inc.**  
 4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

Borehole # MW - 3  
 Well # MW - 3  
 Page 1 of 1

Project Name EPNG - Chaco Plant  
 Project Number 10942 Phase 2001 / 77  
 Project Location San Juan County, NM

Elevation \_\_\_\_\_  
 Borehole Location MW - 3  
 GWL Depth 8'  
 Logged By Scott Pope  
 Drilled By Rodgers Inc.  
 Date/Time Started 9-29-93 / 1230  
 Date/Time Completed 9-29-93 / 1345

Well Logged By Scott Pope  
 Personnel On-Site Scott Pope  
 Contractors On-Site Rodgers Inc.  
 Client Personnel On-Site Kris Sinclair  
 Drilling Method HSA 6 1/4" ID  
 Air Monitoring Method HNU, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
							BZ	BH	S	
0										
5	1	5	SS 24	Brown SAND with Silt, fine grained Sand, trace organic matter, moist, loose.	SW		0	0	0	- Noted wet cuttings starting at 6'.
						8.0	0	0	0	- Water at 8'.
10	2	10	SS 24	Dark Gray-Black SAND, fine-medium grained, with Silt, saturated, loose.	SW	9.7				- Noted dark gray-black staining at 8-10' w/sewage odor. No PID readings.
				Grayish-Green Silty CLAY, with evaporate filling of voids, oxidizes, low plasticity, moist, very stiff.	CL	13.0				
15	3	15	SS 24	Grayish-Green Silty CLAY, w/Sand, fine-med. Sand, low plasticity, moist, stiff.			0	0	0	- Noted grey-dark grey discoloration throughout, slight sewage odor.
				-----		16.5				
20	4	20	SS 3	Brown-Gray SAND, coarse grained, moist, very dense, possibly cemented.	SP		0	0	0	- Sample refusal at 3". No odors.
				TOB - 20'						
25										
30										
35										
40										

Comments: Will set well at 20'.

Geologist Signature

*Scott T. Pope*

# RECORD OF SUBSURFACE EXPLORATION

Burlington Environmental Inc.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 326-2282 FAX (505) 326-2388

Borehole # MW - 4  
Well # MW - 4  
Page 1 of 1

Project Name EPNG - Chaco Plant  
Project Number 10942 Phase 2001 / 77  
Project Location San Juan County, NM

Elevation \_\_\_\_\_  
Borehole Location MW - 4  
GWL Depth 20'  
Logged By Scott Pope  
Drilled By Rodgers Inc.  
Date/Time Started 9-30-93 / 0945  
Date/Time Completed 9-30-93 / 1210

Well Logged By Scott Pope  
Personnel On-Site Scott Pope  
Contractors On-Site Rodgers Inc.  
Client Personnel On-Site Kris Sinclair

Drilling Method HSA 6 1/4" ID  
Air Monitoring Method HNU, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (Inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
							BZ	BH	S	
0										
5	1	5	SS 18	Brown Silty Sandy CLAY, fine-medium Sand, trace moisture, very stiff, trace fine Gravel, evaporate filling of voids.	CL		0	0	0	
10	2	10	SS 16	Brown-Lt. Brown Silty SAND w/Clay, fine-med. Sand, some oxidizing, moist, very dense.	SM	8.0	0	0	0	- Sample Refusal at 16".
				Lt. Brown-Yellow CLAY w/Sand, trace moisture, very stiff (cuttings).	CL	11.0				- Very tight drilling. Had to add water (5 gal) to get cuttings to exit hole.
15	3	15	SS 6	Lt. Brown-Yellow SAND with Silt, trace Clay, medium-coarse Sand, moist, very dense, probably cemented.	SW	13.0	0	0	0	- Very hard drilling. - Driller felt like he got through tight layer at 17".
20	4	20	SS 6	Lt. Brown coarse SAND, trace Gravel, trace Silt, moist, very dense, possibly cemented.	SP	18.0	0	0	0	- Refusal at 6". - Had 4" water in hole. - Noted gravel in cuttings, some as large as 2".
25	5	25	S 12	4" of Gray CLAY surrounding coarse, moist Sand and coarse Gravel, very stiff, changing to Yellow Sandy Gravelly CLAY with coarse to very coarse Sand and coarse Gravel. Noted some wet zones within sand and gravel.	CL	23.0	0	0	0	- Refusal at 12". - Had approximately 2" of water enter hole after sitting 10 min.
30	6	30	SS 24	Gray Silty CLAY w/periodic fine Sand lenses, ox- idizing, trace coal, low plasticity, moist, very stiff. Appeared laminated in some areas.	CL	28.0				- Noted abundant saturated cuttings. - Driller noted changes at 27".
				TOB - 30'						
35										
40										

Comments: Will set well at 28'.

Geologist Signature

*Scott T. Pope*

# RECORD OF SUBSURFACE EXPLORATION

Burlington Environmental Inc.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 328-2282 FAX (505) 328-2388

Borehole # MW - 05  
Well # MW - 05  
Page 1 of 1

Project Name EPNG - Chaco Plant  
Project Number 12588 Phase 2001 / 77  
Project Location San Juan County, NM

Elevation \_\_\_\_\_  
Borehole Location MW - 05  
GWL Depth 23'  
Logged By Scott Pope  
Drilled By Rodgers Inc.  
Date/Time Started 6-27-94 / 1100  
Date/Time Completed 6-27-94 / 1345

Well Logged By Scott Pope  
Personnel On-Site Scott Pope  
Contractors On-Site Rodgers Inc.  
Client Personnel On-Site Gerry Garibay

Drilling Method HSA 6 1/4" ID  
Air Monitoring Method HNU, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
							BZ	BH	S	
0										
5	1	3.5 5.5	SS 20"	Brown Sandy CLAY, trace Silt, Sand fine-medium grained, some evaporite filling of voids and oxi-stains, medium plasticity, medium stiff, moist.	CL	7.5	0	0	0	Driller noted change in conditions @ 7.5'.
10	2	8.5 10.5	SS 24"	Brown SAND, fine-medium grained, loose, moist to wet.	SW	10.5	0	0	0	
				Brown-gray CLAY, trace fine Sand and Silt, stiff, moist, some evaporite filling of voids.	CL	13.5	0	0	0	Refusal @ 6".
15	3	13.5 15.5	SS 6"	Lt. Brown-Tan SAND, medium-coarse grained, very hard possibly cemented, moist.			0	0	0	
20	4	18.5 20.5	SS 8"	Tan-Buff SAND, same as above.	SW		0	0	0	Refusal @ 8".
25	5	23.5 25.5	SS 8"	Lt. Brown-Buff SAND, fine grained, very hard, trace moisture, probably cemented. Lt. Brown-Buff SAND, coarse grained, trace fine Gravel, trace Clay, moist-wet.	SP	24	0	0	0	Refusal @ 8". Noted 1" water in bottom of hole on driller's tape.
30	6	28.5 30.5	SS 10"	Lt. Brown-Buff silty SAND, fine grained, very hard, moist, probably cemented. TOB 29.2'	SW	28.5	0	0	0	Refusal @ 10". - Hole open to 28'. - Pulled auger up 2' to let water accumulate in borehole. Water came up to 25'. - Discussed well comple- tion with Gerry Garibay, will set @ 28' with 20' of screen.
35										
40										

Comments:

Geologist Signature

*Lisa T. Pann*

# RECORD OF SUBSURFACE EXPLORATION

Burlington Environmental Inc.  
4000 Marvée Road  
Farmington, New Mexico 87401  
(505) 326-2262 FAX (505) 326-2388

Borehole # MW - 06  
Well # MW - 06  
Page 1 of 1

Project Name EPNG - Chaco Plant  
Project Number 12588 Phase 2001 / 77  
Project Location San Juan County, NM

Elevation \_\_\_\_\_  
Borehole Location MW - 06  
GWL Depth 11.5'  
Logged By Scott Pope  
Drilled By Rodgers Inc.  
Date/Time Started 6-28-94 / 0745  
Date/Time Completed 6-28-94 / 0910

Well Logged By Scott Pope  
Personnel On-Site Scott Pope  
Contractors On-Site Rodgers Inc.  
Client Personnel On-Site None

Drilling Method HSA 6 1/4" ID  
Air Monitoring Method HNU, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: MDU BZ SH S			Drilling Conditions & Blow Counts
0										
5	1	3.5 5.5	SS 12"	Brown-Lt. Brown SAND, fine grained, trace Silt, some evaporite filling of voids, very hard, moist.	SP		0	0	0	Refusal @ 12".
10	2	8.5 10.5	SS 24"	Brown SAND, fine grained, trace Silt, medium dense, moist to wet.			0	0	0	
15	3	13.5 15.5	SS 24"	Brown CLAY, with Silt and fine Sand, stiff, moist, evaporite filling of voids.	CL	13.5	0	0	0	Pull augers up 1' to let water accumulate. Water came up 11.5' in borehole. Will set well @ 22.0'. - Driller felt like lithology changed to sandstone @ 19', but no cuttings to show change. - No additional samples taken past 15.5'.
20										
25										
30										
35										
40										
				TOB - 22.0'						

Comments:

Geologist Signature

*Scott T. Pope*

# RECORD OF SUBSURFACE EXPLORATION

Burlington Environmental Inc.  
4000 Morris Road  
Farmington, New Mexico 87401  
(505) 326-2282 FAX (505) 326-2388

Borehole # MW - 07  
Well # MW - 07  
Page 1 of 1

Project Name EPNG - Chaco Plant  
Project Number 12588 Phase 2001 / 77  
Project Location San Juan County, NM

Elevation \_\_\_\_\_  
Borehole Location MW - 07  
GWL Depth 5'  
Logged By Scott Pope  
Drilled By Rodgers Inc.  
Date/Time Started 6-27-94 / 1525  
Date/Time Completed 6-27-94 / 1615

Well Logged By Scott Pope  
Personnel On-Site Scott Pope  
Contractors On-Site Rodgers Inc.  
Client Personnel On-Site Gerry Garibay

Drilling Method HSA 6 1/4" ID  
Air Monitoring Method HNU, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (Inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
							BZ	SH	S	
0										
5	1	3.5 5.5	SS 20"	Brown SAND, fine grained, trace Silt, loose saturated at bottom.	SP		0	0	0	- Very easy drilling.
10	2	8.5 10.5	SS 24"	Same as above with SAND fine to medium grained.			0	0	0	- Will drill to 17' and set wall. - No samples taken after 10.5'.
15										
20										
25										
30										
35										
40										

Comments:

Geologist Signature

# RECORD OF SUBSURFACE EXPLORATION

## PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # BH#1  
Well # \_\_\_\_\_  
Page 1 of 1

Project Name EPNG Pits  
Project Number 14509 Phase \_\_\_\_\_  
Project Location Flare Pit

Elevation Bottom of pit ~ 10' deep (Below Berm)  
Borehole Location Chaco Plant  
GWL Depth Estimated @ 11'  
Logged By CM Chance  
Drilled By R. Padilla  
Date/Time Started 10/11/95 - 1015  
Date/Time Completed 10/11/95 - 1200

Well Logged By CM Chance  
Personnel On-Site F. Rivera, D. Charlie  
Contractors On-Site \_\_\_\_\_  
Client Personnel On-Site P. Marquez  
Drilling Method 4 1/4 I.D. HSA  
Air Monitoring Method PID, CGT

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: <u>ppm</u> BZ BH <u>SHS</u>			Drilling Conditions & Blow Counts
0				Fill to ~ 3'						
5	1	5-7	5"	Gry silty SAND, vF sand, loose, saturated, moist <i>enc. 10/14/95</i>	SM		0	20	<u>48</u> <u>138</u>	1016m
10	2	10-12	10	Blk silty SAND, vF sand, loose, saturated.		12'	0	30	<u>12</u> <u>NA</u>	1021 Sample saturated. No Headspace GW est. @ 11'
15	3	15-17	8	lt Br silty CLAY, med stiff, low plastic, saturated			0	18	<u>2</u> <u>NA</u>	1027 Sample sat. No HS
20	4	20-22	24	lt Br silty CLAY, stiff, non plastic, dry	CL		0	0	<u>0</u> <u>0</u>	1039
25	5	25-27	23	lt Br silty CLAY, + vF sand, v. stiff, non plastic, dry			0	0	<u>0</u> <u>0</u>	1102
30	6	30-32	12	Br silty CLAY, + vF sand, v. stiff, non plastic, + evaporite filling			0	0	<u>0</u> <u>0</u>	1113
35				TDB 32'						
40										

### Comments:

CMC 142 (5-7') + CM (14) (30-32') sent to lab (BTEX, TPH). After talking with P. Marquez, will drill to 30' to ensure below GW. BH grouted to surface by tremie. Note: GW collected on all split spoon samples below ~11'

Geologist Signature

CM Chance

# RECORD OF SUBSURFACE EXPLORATION

## PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # BH#2

Well #

Page 1 of 1

Project Name

EPNG PITS

Project Number

14509

Phase

6010.77

Project Location

Chase Plant BH-2

Elevation ~5' below berm

Borehole Location Chase Plant

GWL Depth

Logged By CM Chance

Drilled By K. Padilla

Date/Time Started 10/11/95 - 1255

Date/Time Completed 10/11/95 - 1500

Well Logged By

CM Chance

Personnel On-Site

F. Rivera, D. Charlie

Contractors On-Site

Client Personnel On-Site

P. Marquez

Drilling Method

4 1/4" I.D. HSA

Air Monitoring Method

PID, CG2

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
							BZ	BH	S	
0				Fill to ~5'						
5	1	5-7	0	No Recovery			0	8	NA	1302h - Ctns wet
10	2	10-12	6"	BLK SAND, vF sand, med dense moist	SM	12'	0	6	$\frac{0}{345}$	1307 - GW @ ~12' - Ctns sat. @ 13'
15	3	15-17	18"	lt Br silty CLAY, stiff, med plastic, tr evaporite fillings dry	CL		0	4	$\frac{0}{108}$	1318
20	4	20-22	14"	lt Br sandy CLAY, vF sand, stiff, non plastic, sl moist			0	8	$\frac{0}{0}$	1327
25	5	25-27	12	lt Br SAND, vF-F sand, dense, dry	SM	23'	0	6	$\frac{0}{0}$	1338
30	6	30-32	12	lt Br/yellow/dk Br mottled CLAY, dense, dry	CL	27'	0	3	$\frac{0}{0}$	1353
				TDB 32'						
35										
40										

Comments:

Note: W From above is collecting on split spoon. CMC 144 (10-12') sent to lab for TPTI.  
CMC 145 (30-32') sent to lab for BTEX, TPH. BH grout. to surface by Tremie

Geologist Signature

CM Chance

# RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # BH # 3

Well #

Page 1 of 1

Project Name EPNG PITS

Project Number 14509 Phase 6010.77

Project Location Chaco Plant BH-3

Well Logged By CM Chance

Personnel On-Site F. Rivera, D. Charlie

Contractors On-Site

Client Personnel On-Site P. Marquez

Elevation On Berm

Borehole Location Chaco Plant

GWL Depth 10.5'

Logged By CM Chance

Drilled By K. Padilla

Date/Time Started 10/12/95 - 0735

Date/Time Completed 10/12/95 - 0930

Drilling Method 4 1/2 I.D. HSA

Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: TDD BZ BH			Drilling Conditions & Blow Counts
0										
5	1	5-7	14	BLK sandy CLAY, vf sand, med stiff, low plastic, dry	CL	8	0	0	1/25	-0740 hr
10	2	10-12	8	Gry SAND, vf-f sand, med dens, moist	SM		0	3	1/4	-0746 -GW @ 10.5' Black
15	3	15-17	24	BLK silty SAND, vf-f sand, med dense, wet			0	1	0/NA	-0756 -Sample saturated No Headspace
20	4	20-22	24	AA lt Br sandy CLAY, vf sand, med stiff, low plastic, sl moist	CL	20	0	3	0/0	-0807
25	5	25-27	20	AA		26	0	3	0/0	-0818
30	6	30-32	18	lt Br clayey SAND, vf-f sand, dense, dry, tr evaporite filling	SC	31.5	0	0	0/0	-0826
				DK Br CLAY, v. stiff, low plastic, dry	CL					
				TDB 321						
35										
40										

Comments:

Note: all samples below GW had GW collecting on splines. CM 146(5-7) sent to lab  
for TPH. CM 147(30-32) sent to lab for BTEX, TPH. BH grouted to  
surface by tremie

Geologist Signature

CM Chance



# RECORD OF SUBSURFACE EXPLORATION

Borehole # BH #4  
Well # \_\_\_\_\_  
Page 1 of 1

## PHILIP ENVIRONMENTAL

4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 326-2262 FAX (505) 326-2388

Project Name EPNG PMS  
Project Number 14509 Phase 6010.77  
Project Location Chaco Plant Industrial Pond #2

Elevation <sup>inc</sup> Berm  
Surface Level inside Pit  
Borehole Location Chaco Plant  
GWL Depth \_\_\_\_\_  
Logged By CM Chance  
Drilled By K. Pabillon  
Date/Time Started 10/11/95 - 0755  
Date/Time Completed 10/11/95 - 1000

Well Logged By CM Chance  
Personnel On-Site F. Rivera, R. Charlin  
Contractors On-Site \_\_\_\_\_  
Client Personnel On-Site P. Marquez  
Drilling Method 4 1/4 I.D.HSA  
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: <del>MDU</del> BZ BH S			Drilling Conditions & Blow Counts
0				Fill to ~10'						
5										
10										
15	1	13-15	24"	Br SAND, v-f sand, well sorted, loose, saturated	SM		0	8	$\frac{0}{NA}$	-0810 hr -sample saturated -GW est. @ 14'
20	2	20-22	12"	Br CLAY, tr v-f sand, med stiff, non plastic, dry	CL	20.5'	0	72	$\frac{0}{0}$	-0904
25				TOB 22'						
30										
35										
40										

### Comments:

CMC 140 (13-15) sent to lab (BTEX, TPH). CMC 141 (20-22) TPH, BTEX, CMC 142 (-) BTEX, TPH. BH grouted to surface by tremie  
Note: GW was collecting on split screen below ~14'

Geologist Signature

CM Chance

# RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # BH-5  
Well # \_\_\_\_\_  
Page 1 of 1

Project Name EPNG PITS  
Project Number 14509 Phase 6000. 60  
Project Location Industrial Pond #1 BH-5

Elevation On berm  
Borehole Location Chaco Plain  
GWL Depth 12.7'  
Logged By C.M. Chance  
Drilled By R. Padilla  
Date/Time Started 10/12/95-0940  
Date/Time Completed 10/12/95-1115

Well Logged By C.M. Chance  
Personnel On-Site F. Rivera, D. Charlie  
Contractors On-Site \_\_\_\_\_  
Client Personnel On-Site P. Marquez  
Drilling Method 4 1/4 I.D. HSA  
Air Monitoring Method PID, CGT

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: <u>ppm</u> BZ BH S/H			Drilling Conditions & Blow Counts
0				Fill to ~ 8'						
5										
10	1	10-12	4	BLK SAND, vf-f sand, med dense, sl moist			0	0	<u>4</u> <u>209</u>	-0945 hr -GW @ 12.7' Black
15	2	15-17	24	Gr. SAND, vf-f sand, dense, wet, BLK silty SAND, vf sand, dense, moist			0	0	<u>0</u> <u>2</u>	-0954
20	3	20-22	10	lt Br sandy CLAY, vf sand, dense, dry, tr evaporite filling			0	0	<u>0</u>	-1001
25	4	25-27	18	AA OR Br CLAY, v. stiff, low plastic, dry lt Br clayey SAND, vf f sand, dense, dry, organic fragments.			0	0	<u>0</u>	-1010
30	5	30-32	8	Br sandy CLAY, v. stiff, non plastic, dry, tr evaporite filling TAB 32			0	0	<u>0</u>	-1017
35										
40										

Comments: CMC 148 (10-12) sent to lab (BTEX, TPH). Sample had highest HS also CMC 149 (30-32)  
sent to lab (BTEX, TPH). BH grouted to surface by tremie  
PID checked against cal gas & is accurate

Geologist Signature C.M. Chance

# RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # BH-6  
Well # \_\_\_\_\_  
Page 1 of 1

Project Name EPNG PITS  
Project Number 14509 Phase 6000-60  
Project Location Chaco Plant BH-6

Elevation On berm  
Borehole Location Chaco Plant  
GWL Depth 13.6'  
Logged By CM Chance  
Drilled By R. Padilla  
Date/Time Started 10/12/95-1335  
Date/Time Completed 10/12/95-1515

Well Logged By CM Chance  
Personnel On-Site F. Rivera, D. Charlie  
Contractors On-Site \_\_\_\_\_  
Client Personnel On-Site P. Marquez  
Drilling Method 4 1/2" I.D. HSA  
Air Monitoring Method PID, CGT

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NPP BZ BH S/H			Drilling Conditions & Blow Counts
0										
5	1	5-7	10	lt grey SAND, vF sand, v. loose, sl moist	SM		0	0	0/16	-1342
				Br SAND, vF sand, v. loose, sl moist						
10	2	10-12	8	lt grey SAND, vF sand, loose, sl moist	SM		0	0	2/131	-1347
				Br clayey SAND, vF sand, loose, sl moist						-GW@13.6'
15	3	15-17	10	DK grey-gry SAND, vF sand, med dense, wet	SM	17	0	1	0/NA	-1352 -No HS. Sample Saturated
20	4	20-22	10	lt Br/Gry mottled CLAY, tr vF sand, stiff, med plastic, dry			0	0	0/0	-1406
25	5	25-27	6	lt Br sandy CLAY, v. stiff, non plastic, dry	CL		0	0	0/0	-1415
30	6	30-32	12	Br/DKBr mottled sand CLAY, vF sand, v. stiff, dry, tr vF sand Partings, tr evaporite fillings			0	0	0/0	-1423
				TDB 32'						
35										
40										

Comments:

CMC 152 (10-12') sent to lab (TPH) CMC 153 (30-32') sent to lab (BTX, TPH)  
BH grouted to surface w/ tremie

Geologist Signature

Corey Chance

# RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-7  
Well # \_\_\_\_\_  
Page 1 of 1

## PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Project Name

EPNG PITS

Project Number

14509

Phase

6000-60

Project Location

Chaco Plant BH-7

Elevation On berm

Borehole Location Chaco Plant

GWL Depth 20.3'

Logged By CM Chance

Drilled By R. Padilla

Date/Time Started 10/12/95-1125

Date/Time Completed 10/12/95-1315

Well Logged By

CM Chance

Personnel On-Site

F. Rivera, D. Charlie

Contractors On-Site

Client Personnel On-Site

P. Marquez

Drilling Method

4 1/2" I.D. HSA

Air Monitoring Method

PID, CGT

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: <u>PPM</u> BZ BH S/H			Drilling Conditions & Blow Counts
0										
5	1	5-7	5	DK gry SAND, vF sand, med dense, sl moist			0	0	5/27	-1129 m
10	2	10-12	18	lt gry SAND, vF sand, med dense, sl moist			0	0	4/32	-1132
15	3	15-17	16	BIK SAND, vF sand, med dense, moist			0	0	0/0	-1139
20	4	20-22	18	Alt Br silty CLAY, stiff, nonplastic, dry			0	0	0/0	-1144 - GW @ 20.3' after sealing 10 min - CTNGS SATURATED
25	5	25-27	8	BIK clay SAND, vF sand, dense, wet						-1202
				lt Br - Redish Br SAND, vF sand, v. dense, dry			0	0	0/0	
30	6	30-32	10	lt Br silty SAND, vF sand, v. dense, dry, to evaporite fillings			0	0	0/0	-1219
				TOB 32'						
35										
40										

Comments:

CMC 150 (10-12) sent to lab (TPH). CMC 151 (30-32) sent to lab (BTEX, TPH)  
BH grouted to surface w/ tremie

Geologist Signature

CM Chance

# RECORD OF SUBSURFACE EXPLORATION

## PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # BH-8a

Well #

Page 1 of 2

Project Name

EPNG PITS

Project Number

14509

Phase

6000 ~~77~~ 60

Project Location

Chaco Plant BH-8a

Elevation On berm

Borehole Location Q - S - T - R

GWL Depth

Logged By CM CHANCE

Drilled By K Padilla

Date/Time Started 10/13/95-0820

Date/Time Completed 10/13/95-1200

Well Logged By

CM Chance

Personnel On-Site

K Padilla, F. Rivera, D. Charlie

Contractors On-Site

Client Personnel On-Site

Drilling Method

4 1/4" ID HSA 8 1/4" ID

Air Monitoring Method

PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM			Drilling Conditions & Blow Counts
							BZ	BH	HS	
0				Fill to ~10'						
5										
10	1	10-12	4	Br SILT, loose, dry			0	0	0	-0833h
15	2	15-17	5	Br/gry mottled CLAY, trvf sand, med stiff, low plastic, dry			0	0	0	-0844
20	3	20-22	4	A/A			0	0	0	-0904
25	4	25-27	5	lt Br SAND, vf-f sand, v. dense, sl cemented, dry			0	0	0	-v. hard dring -1015 -Refusal @ 23' w 8 1/4"
30	5	30-32	4	lt Br SAND, F-med sand, v. dense, dry			0	0	0	-1026
35	6	35-37	4	A/A			0	0	0	-1039
40	7	40-42	4	Br/off wh SAND, vf-f, tr med sand, occ. cementation dry			0	0	0	-1046

Comments:

Refusal w/ 8 1/4 I.D. augers @ 23'. Will pull & drill pilot hole w/ 4 1/4"  
CMC 154 (40-42') sent to lab (BTEX+PH). Refusal @ 45' w/ 4 1/4" augers. Grout  
BH to surface. Discussed w/ P. Marquez & will move S. to install MW

Geologist Signature

*CM Chance*

# RECORD OF SUBSURFACE EXPLORATION

## PHILIP ENVIRONMENTAL

4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 326-2262 FAX (505) 326-2388

Borehole # BH-1 BH 8a

Well # \_\_\_\_\_

Page 2 of 2

Project Name EPNG PITS

Project Number 14509 Phase 6000 77

Project Location Chase Plant BH-8a

Elevation \_\_\_\_\_

Borehole Location Q - S - T - R

GWL Depth \_\_\_\_\_

Logged By CM CHANCE

Drilled By K Padilla

Date/Time Started 10/12/95-0820

Date/Time Completed 10/12/95-1200

Well Logged By CM Chance

Personnel On-Site K Padilla, F. Rivera, D. Charles

Contractors On-Site \_\_\_\_\_

Client Personnel On-Site \_\_\_\_\_

Drilling Method 4 1/4" ID HSA

Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM			Drilling Conditions & Blow Counts
							BZ	BH	HS	
40										
45	8	45-45.5	0	No recovery TDB 45.5'			0	0	NA - Refusal	
50										
55										
60										
65										
70										
75										
80										

Comments:

Geologist Signature \_\_\_\_\_

# RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # SM-BH-86  
Well # MW-8  
Page 1 of 1

Project Name EPNG PITS  
Project Number 14509 Phase 6000 7760  
Project Location Chaco Plant MW-8

Elevation On berm  
Borehole Location Q - S - T - R Chaco Plant  
GWL Depth 16.2'  
Logged By CM CHANCE  
Drilled By K Padilla  
Date/Time Started 10/12/95 - 1335  
Date/Time Completed 10/12/95 - 1525

Well Logged By CM Chance  
Personnel On-Site K Padilla, F. Rivera & Charlie  
Contractors On-Site \_\_\_\_\_  
Client Personnel On-Site \_\_\_\_\_

Drilling Method 4 1/4" ID HSA  
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM			Drilling Conditions & Blow Counts
							BZ	BH	HS	
0										
5	1	5-10	10	Br SILT, v. soft, dry, r clay			0	0	g	-1338
10	2	10-12	8	lt Gray SILT, v. soft, dry, r clay			0	0	g	-1343
15	3	15-17	6	lt Gray silty SAND, v. sand, loose, moist			0	0	g	-1349 - Split Spoon has moisture - air
20	4	20-22	12	lt gray/Br mottled CLAY, soft, med plastic, moist			0	0	g	-1355 - water dripping from ss
25				Gray saturated CTNGS						
30				TDB 26'						
35										
40										

Comments:

GW @ 16.2' after setting 15 min. CMC 155 (15-17') sent to lab (BT EX TAP)  
Will set well at 26' BG5

Geologist Signature

CM Chance

**MONITORING WELL INSTALLATION DIAGRAMS**



# MONITORING WELL INSTALLATION RECORD

Burlington Environmental Inc.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 326-2282 FAX (505) 326-2388

Borehole # MW-1  
Well # MW-1  
Page 1 of 1

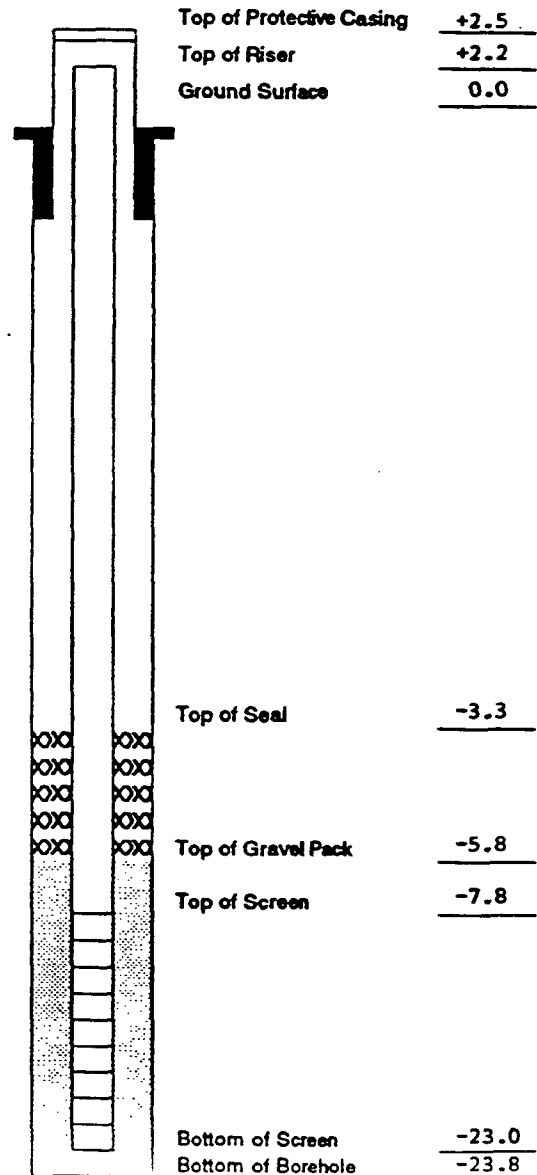
Project Name EPNG CHACO  
Project Number 10942 Phase 2001  
Project Location CHACO PLANT

Elevation \_\_\_\_\_  
Well Location MW-1  
GWL Depth 15.0  
Installed By RODGERS, INC.

On-Site Geologist S. POPE  
Personnel On-Site S. POPE  
Contractors On-Site RODGERS, INC.  
Client Personnel On-Site GERRY GARIBAY  
KRIS SINCLAIR

Date/Time Started 9/29/93 1000  
Date/Time Completed 9/29/93 1100

Depths in Reference to Ground Surface		
Item	Material	Depth (feet)
Top of Protective Casing	8" STEEL	+2.5
Bottom of Protective Casing		-1.5
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete	PREMIX	+3
Bottom of Concrete		0.0
Top of Grout	5% BENTONITE	0.0
Bottom of Grout		-3.3
Top of Well Riser	4" SCH 40 PVC	+2.2
Bottom of Well Riser		-7.8
Top of Well Screen	4" SCH 40 PVC	-7.8
Bottom of Well Screen	.010 SLOT	-23.0
Top of Peltonite Seal	1/4" BENTONITE PELLETS	-3.3
Bottom of Peltonite Seal		-5.8
Top of Gravel Pack	10-20 SILICA	-5.8
Bottom of Gravel Pack		-23.8
Top of Natural Cave-In		N/A
Bottom of Natural Cave-In		N/A
Top of Groundwater		-15.0
Total Depth of Borehole		-23.8



Comments: 8 BAGS OF SAND, 1 BUCKET OF PELLETS

Geologist Signature

*Steve T. Pope*

# MONITORING WELL INSTALLATION RECORD

Burlington Environmental Inc.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 328-2262 FAX (505) 328-2388

Borehole # MW-2  
Well # MW-2  
Page 1 of 1

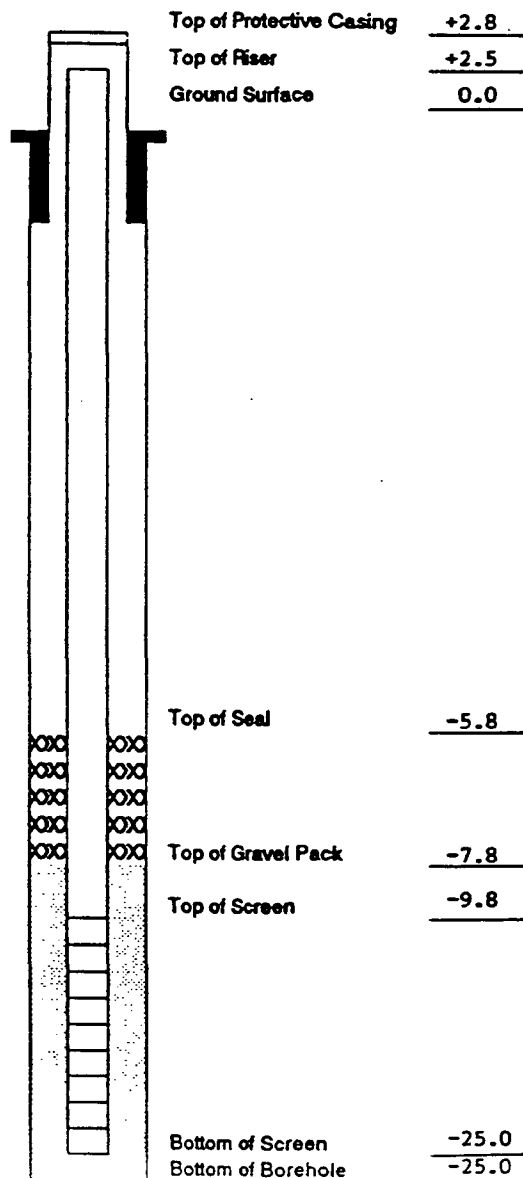
Project Name EPNG CHACO  
Project Number 10942 Phase 2001  
Project Location CHACO PLANT

Elevation \_\_\_\_\_  
Well Location MW-2  
GWL Depth 15'  
Installed By RODGERS, INC.

On-Site Geologist S. POPE  
Personnel On-Site S. POPE  
Contractors On-Site RODGERS, INC.  
Client Personnel On-Site KRIS SINCLAIR

Date/Time Started 9/30/93 1545  
Date/Time Completed 9/30/93 1700

Depths in Reference to Ground Surface		
Item	Material	Depth (feet)
Top of Protective Casing	8" STEEL	-2.8
Bottom of Protective Casing		-1.2
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete	PREMIX	+ .3
Bottom of Concrete		0.0
Top of Grout	5% BENTONITE	0.0
Bottom of Grout		-5.8
Top of Well Riser	4" SCH 40 PVC	+2.5
Bottom of Well Riser		-9.8
Top of Well Screen	4" SCH 40 PVC	-9.8
Bottom of Well Screen	.010 SLOT	-25.0
Top of Peltonite Seal	1/4" BENTONITE PELLETS	-5.8
Bottom of Peltonite Seal		-7.8
Top of Gravel Pack	10-20 SILICA	-7.8
Bottom of Gravel Pack		-25.0
Top of Natural Cave-In		N/A
Bottom of Natural Cave-In		N/A
Top of Groundwater		-15.0
Total Depth of Borehole		-25.0



Comments: 16.3 WATER LEVEL AFTER INSTALLATION, 7.0 BAGS OF SAND, 1 BUCKET OF PELLETS

Geologist Signature

*John T. Pope*

# MONITORING WELL INSTALLATION RECORD

Burlington Environmental Inc.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 328-2282 FAX (505) 326-2388

Borehole # MW-3  
Well # MW-3  
Page 1 of 1

Project Name EPNG CHACO PLANT  
Project Number 10942 Phase 2001  
Project Location CHACO PLANT

Elevation \_\_\_\_\_  
Well Location MW-3  
GWL Depth 8'  
Installed By RODGERS, INC.

On-Site Geologist S. POPE  
Personnel On-Site S. POPE  
Contractors On-Site RODGERS, INC.  
Client Personnel On-Site KRIS SINCLAIR

Date/Time Started 9/29/93 1345  
Date/Time Completed 9/29/93 1500

Depths in Reference to Ground Surface				
Item	Material	Depth (feet)		
Top of Protective Casing	8" STEEL	+2.5		
Bottom of Protective Casing		-1.5		
Top of Permanent Borehole Casing		N/A		
Bottom of Permanent Borehole Casing		N/A		
Top of Concrete	PREMIX	+3		
Bottom of Concrete		0.0		
Top of Grout	5% BENTONITE	0.0		
Bottom of Grout		-1.5		
Top of Well Riser	4" SCH 40 PVC	+2.2		
Bottom of Well Riser		-4.5		
Top of Well Screen	4" SCH 40 PVC	-4.5		
Bottom of Well Screen	.010 SLOT	-19.8		
Top of Peltonite Seal	1/4" BENTONITE PELLETS	-1.5		
Bottom of Peltonite Seal		-3.5		
Top of Gravel Pack	10-20 SILICA	-3.5		
Bottom of Gravel Pack		-20.0		
Top of Natural Cave-In		N/A		
Bottom of Natural Cave-In		N/A		
Top of Groundwater		-8.0		
Total Depth of Borehole		-20.0		

Comments: 6 BAGS OF SAND, 1 1/2 BUCKET OF PELLETS

WELL WAS PULLED UP 3" DUE TO BRIDGING SAND. WATER LEVEL AFTER INSTALLATION 11.3' BGS.

Geologist Signature

*[Signature]*

# MONITORING WELL INSTALLATION RECORD

Burlington Environmental Inc.

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # MW-4

Well # MW-4

Page 1 of 1

Project Name EPNG CHACO

Project Number 10942 Phase 2001

Project Location EPNG CHACO PLANT

Elevation \_\_\_\_\_

Well Location MW-4

GWL Depth 20'

Installed By RODGERS, INC.

On-Site Geologist S. POPE

Personnel On-Site S. POPE

Contractors On-Site RODGERS, INC.

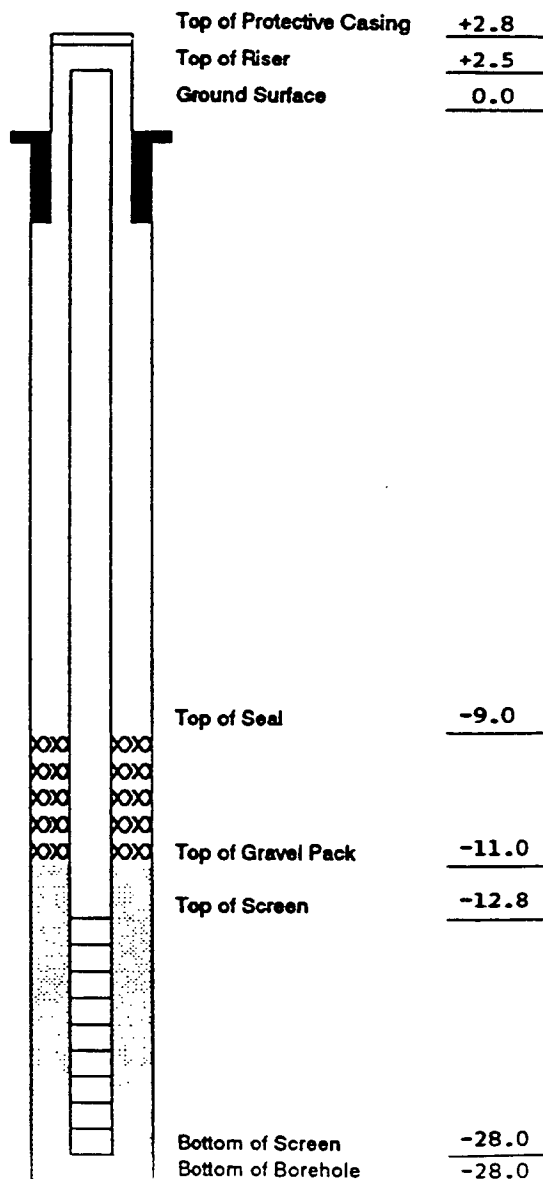
Client Personnel On-Site KRIS SINCLAIR

Date/Time Started 9/30/93 1210

Date/Time Completed 9/30/93 1330

## Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing	8" STEEL	+2.8
Bottom of Protective Casing		-1.2
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete	PREMIX	+ .3
Bottom of Concrete		0.0
Top of Grout	5% BENTONITE	0.0
Bottom of Grout		-9.0
Top of Well Riser	4" SCH 40 PVC	+2.5
Bottom of Well Riser		-12.8
Top of Well Screen	4" SCH 40 PVC	-12.8
Bottom of Well Screen	.010 SLOT	-28.0
Top of Peltonite Seal	1/2" BENTONITE CHIPS	-9.0
Bottom of Peltonite Seal		-11.0
Top of Gravel Pack	10-20 SILICA	-11.0
Bottom of Gravel Pack		-28.0
Top of Natural Cave-In		N/A
Bottom of Natural Cave-In		N/A
Top of Groundwater		-20.0
Total Depth of Borehole		-28.0



Comments: WATER LEVEL AT 17.5 AFTER INSTALLATION. 7.5 BAGS OF SAND, 1 1/2 BUCKETS OF SAND

Geologist Signature

*Steve T. Pope*

# MONITORING WELL INSTALLATION RECORD

Burlington Environmental Inc.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 326-2282 FAX (505) 326-2388

Borehole # MW-05  
Well # MW-05  
Page 1 of 1

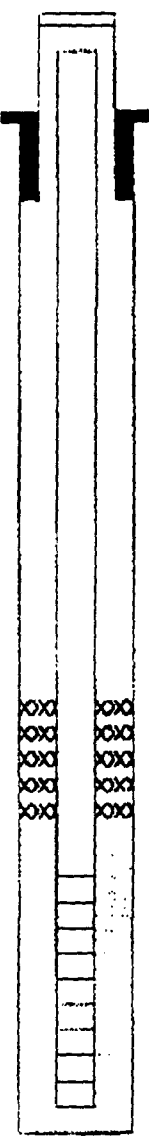
Project Name EPNG CHACO  
Project Number 12588 Phase 2001  
Project Location SAN JUAN COUNTY, NEW MEXICO

Elevation \_\_\_\_\_  
Well Location MW-05  
GWL Depth 23.0  
Installed By RODGERS, INC.

On-Site Geologist S. POPE  
Personnel On-Site G. GARIBAY  
Contractors On-Site RODGERS, INC.  
Client Personnel On-Site P. MARQUEZ

Date/Time Started 1345 6/27/94  
Date/Time Completed 1445 6/27/94

Depths in Reference to Ground Surface				
Item	Material	Depth (feet)		
Top of Protective Casing	8" STEEL LOCKING	+2.5		
Bottom of Protective Casing		-1.5		
Top of Permanent Borehole Casing		N/A		
Bottom of Permanent Borehole Casing		N/A		
Top of Concrete	PREMIX	+2.5		
Bottom of Concrete		-1.5		
Top of Grout		N/A		
Bottom of Grout		N/A		
Top of Well Riser	4" SCH 40 PVC	+2.0		
Bottom of Well Riser		-8.0		
Top of Well Screen	4" SCH 40 PVC	-8.0		
Bottom of Well Screen	.010 SLOT	-28.1		
Top of Peltonite Seal	1/4" BENTONITE PELLETS	-1.5		
Bottom of Peltonite Seal		-5.7		
Top of Gravel Pack	10-20 SILICA	-5.7		
Bottom of Gravel Pack		-28.1		
Top of Natural Cave-In		-28.1		
Bottom of Natural Cave-In		-29.2		
Top of Groundwater		-23.0		
Total Depth of Borehole		-29.2		



Top of Protective Casing	<u>2.5</u>
Top of Riser	<u>2.0</u>
Ground Surface	<u>0.0</u>
Top of Seal	<u>1.5</u>
Top of Gravel Pack	<u>5.7</u>
Top of Screen	<u>8.0</u>
Bottom of Screen	<u>28.1</u>
Bottom of Borehole	<u>29.2</u>

Comments: 10 - 100 LB. BAGS OF SAND, 2 BUCKETS PELLETS, HYDRATED WITH 4 GALLONS OF WATER.

Geologist Signature

*[Signature]*

# MONITORING WELL INSTALLATION RECORD

Burlington Environmental Inc.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 326-2262 FAX (505) 326-2308

Borehole # MW-06  
Well # MW-06  
Page 1 of 1

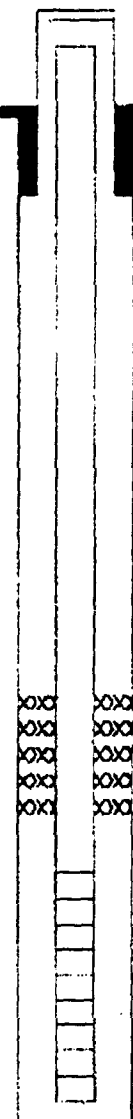
Project Name EPNG CHACO  
Project Number 12588 Phase 2001  
Project Location SAN JUAN COUNTY, NEW MEXICO

Elevation \_\_\_\_\_  
Well Location MW-06  
GWL Depth 11.5  
Installed By RODGERS, INC.

On-Site Geologist S. POPE  
Personnel On-Site G. CARIBAY  
Contractors On-Site RODGERS, INC.  
Client Personnel On-Site P. MARQUEZ

Date/Time Started 0910 6/28/94  
Date/Time Completed 1100 6/28/94

Depths in Reference to Ground Surface				
Item	Material	Depth (feet)		
Top of Protective Casing	8" STEEL LOCKING	+2.5		
Bottom of Protective Casing		-1.5		
Top of Permanent Borehole Casing		N/A		
Bottom of Permanent Borehole Casing		N/A		
Top of Concrete	PREMIX	+2.25		
Bottom of Concrete		-1.5		
Top of Grout		N/A		
Bottom of Grout		N/A		
Top of Well Riser	4" SCH 40 PVC	+2.3		
Bottom of Well Riser		-6.9		
Top of Well Screen	4" SCH 40 PVC	-6.9		
Bottom of Well Screen	.010 SLOT	-22.0		
Top of Bentonite Seal	1/4" BENTONITE PELLETS	-1.5		
Bottom of Bentonite Seal		-5.0		
Top of Gravel Pack	10-20 SILICA	-5.0		
Bottom of Gravel Pack		-22.0		
Top of Natural Cave-in		N/A		
Bottom of Natural Cave-in		N/A		
Top of Groundwater		-11.5		
Total Depth of Borehole		-22.0		



Top of Protective Casing	<u>2.5</u>
Top of Riser	<u>2.3</u>
Ground Surface	<u>0.0</u>
Top of Seal	<u>1.5</u>
Top of Gravel Pack	<u>5.0</u>
Top of Screen	<u>6.9</u>
Bottom of Screen	<u>22.0</u>
Bottom of Borehole	<u>22.0</u>

Comments: HAD PROBLEMS WITH CLAY RING IN LEAD AUGER. HAD TO PULL WELL AND CLEAN AUGER. HOLE STAYED OPEN AND WELL WENT TO 22.0'. 9 - 100 LB. BAGS OF SAND, 2 BUCKETS PELLETS, HYDRATED WITH 4 GALLONS OF WATER.

Geologist Signature

*[Signature]*

# MONITORING WELL INSTALLATION RECORD

Burlington Environmental Inc.  
4000 Marrow Road  
Farmington, New Mexico 87401  
(505) 326-2262 FAX (505) 326-2388

Borehole # MW-07  
Well # MW-07  
Page 1 of 1

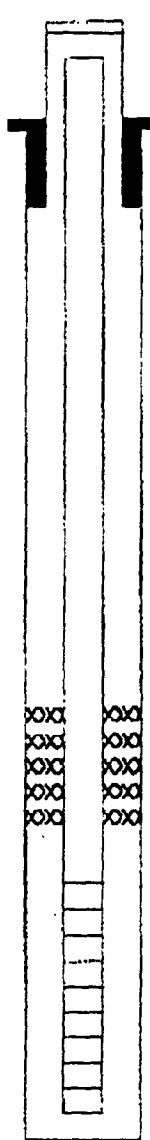
Project Name EPNG CHACO  
Project Number 12588 Phase 2001  
Project Location SAN JUAN COUNTY, NEW MEXICO

Elevation \_\_\_\_\_  
Well Location MW-07  
GWL Depth 4.0  
Installed By RODGERS, INC.

On-Site Geologist S. POPE  
Personnel On-Site S. POPE  
Contractors On-Site RODGERS, INC.  
Client Personnel On-Site G. GARIWAY

Date/Time Started 1615 6/27/94  
Date/Time Completed 1715 6/27/94

Depths in Reference to Ground Surface		
Item	Material	Depth (feet)
Top of Protective Casing	8" STEEL LOCKING	+2.5
Bottom of Protective Casing		-1.5
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete	PREMIX	+3
Bottom of Concrete		0.0
Top of Grout		N/A
Bottom of Grout		N/A
Top of Well Riser	4" SCH 40 PVC	+2.3
Bottom of Well Riser		-1.9
Top of Well Screen	4" SCH 40 PVC	-1.9
Bottom of Well Screen	.010 SLOT	-17.0
Top of Peltonite Seal	1/4" BENTONITE PELLETS	0.0
Bottom of Peltonite Seal		-1.5
Top of Gravel Pack	10-20 SILICA	-1.5
Bottom of Gravel Pack		-17.7
Top of Natural Cave-In		N/A
Bottom of Natural Cave-In		N/A
Top of Groundwater		-4.0
Total Depth of Borehole		-17.7



Top of Protective Casing	<u>2.5</u>
Top of Riser	<u>2.3</u>
Ground Surface	<u>0.0</u>
Top of Seal	<u>0.0</u>
Top of Gravel Pack	<u>1.5</u>
Top of Screen	<u>1.9</u>
Bottom of Screen	<u>17.0</u>
Bottom of Borehole	<u>17.7</u>

Comments: 5 - 100 LB. BAGS OF SAND, 1 BUCKET PELLETS, HYDRATED WITH 4 GALLONS OF WATER. WL AFTER INSTALLATION 5.0 BGS.

Geologist Signature

*[Signature]*

# MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.  
4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 326-2262 FAX (505) 326-2388

Borehole # BH-8b  
Well # MW-8  
Page 1 of 1

Project Name EPNG PITS

Project Number 14509 Phase 6001.7761  
Project Location Chaco Plant MW-8

Elevation \_\_\_\_\_  
Well Location Q -S -T -R  
GWL Depth 16.2'  
Installed By R. Padilla

On-Site Geologist CM Chance  
Personnel On-Site F. Rivera, D. Charles  
Contractors On-Site \_\_\_\_\_  
Client Personnel On-Site \_\_\_\_\_

Date/Time Started 10/12/95-1540  
Date/Time Completed 10/12/95-1700

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing		NA		Top of Protective Casing <u>NA</u>
Bottom of Protective Casing		NA		Top of Riser <u>+3'</u>
Top of Permanent Borehole Casing		NA		Ground Surface <u>0</u>
Bottom of Permanent Borehole Casing		NA		
Top of Concrete		NA		
Bottom of Concrete		NA		
Top of Grout	-94# Type I-II	0'		
Bottom of Grout	-50# Portland Powdered Bentonite	4.7		
Top of Well Riser	1/4" dia SCH40	+3		
Bottom of Well Riser	Flush Thread PVC	9.7		
Top of Well Screen	1/4" dia SCH40 Flush Thread	9.7		Top of Seal <u>4.7</u>
Bottom of Well Screen	0.01 slot PVC	24.7		
Top of Peltonite Seal	-50# Enviro plug	4.7		
Bottom of Peltonite Seal	Bentonite	6.7		Top of Gravel Pack <u>6.7</u>
Top of Gravel Pack	-50# 10-20	6.7		Top of Screen <u>9.7</u>
Bottom of Gravel Pack	Silica Sand	24.7		
Top of Natural Cave-In		24.7		
Bottom of Natural Cave-In		26'		
Top of Groundwater				
Total Depth of Borehole		26'		Bottom of Screen <u>24.7</u> Bottom of Borehole <u>26</u>

Comments: Bentonite hydrated w/ 5gal potable water. GW had no odor or visible contamination

Geologist Signature CM Chance



**Well Development Data Sheets**

DATE 10, 1, 93WELL NO. MW-9

## DEVELOPMENT TECHNIQUES

DATE	DEVELOPMENT METHOD	MATERIAL OR SERIAL NO.	DEVELOPMENT TECHNICIAN	VOLUMES REMOVED/TYPE
10-1-93	TEFLON BARREL		Gwen Smith	.

## WATER QUALITY/WATER REMOVAL

## WATER QUALITY READINGS

## WATER REMOVAL DATA

DATE	TIME	TOTAL INCREMENT GALLONS REMOVED	TOTAL WELL INCREMENT VOLUMES REMOVED	TEMP (°C)	PH	CONDUCTIVITY (umhos/cm)	APPEARANCE/ COMMENTS	DEVELOPMENT START TIME	DEVELOPMENT STOP TIME	REMOVAL RATE (GPM)	PUMP INTAKE LEVEL	WATER LEVEL BEFORE DEVELOPMENT	WATER LEVEL AFTER DEVELOPMENT
10-1-93	11:50	5	5	67	7.0	6,590	LIGHT BROWN	1130				20.04	
	12:02	10	5	67.5	6.69	6,860	LIGHT BROWN						
	12:06	15	5	68.0	6.63	6,730	LIGHT BROWN						
	12:14	20	5	68.2	6.65	6,950	LIGHT BROWN						
	12:21	25	5	68.5	6.71	7,100	LIGHT BROWN						
	12:28	30	5	62.5	7.83	7,030	CLOUDY						
	12:35	35	5	62.3	6.94	6,730	CLOUDY		1240				23.05

COMMENTS \_\_\_\_\_

## NOTES:

1. COMMENTS SHOULD DELINEATE FINAL SAMPLE AND REPLICATE MEASUREMENTS.
2. ANY INSTRUMENTATION CALIBRATION OR USE ANOMALIES SHOULD BE NOTED.
3. APPEARANCE SHOULD BE NOTED BEFORE, DURING, AND AFTER DEVELOPMENT.



BURLINGTON  
ENVIRONMENTAL

## WELL DEVELOPMENT & PURGING GENERAL DATA

SERIAL NO. WD \_\_\_\_\_  
PAGE \_\_\_\_\_ OF \_\_\_\_\_

PROJECT NAME CHACO WELL NO. MW-4  
PROJECT NO. 10942 MAJOR TASK 2002 SUB TASK 77  
DATE 10/1/93 FORM COMPLETED BY WILL SMITH

### WELL CONSTRUCTION

TOTAL DEPTH (FT) 30.70 BOREHOLE DIAMETER (IN) 10"  
GRAVEL PACK INTERVAL (FT) 17' WELL DIAMETER INSIDE (IN) 4"  
WELL PROTECTOR: ☒ YES ☐ NO PADLOCK NO. 2532  
QUANTITY OF FLUID INJECTED DURING DRILLING (GALLONS) \_\_\_\_\_

### WATER VOLUME CALCULATION

DATE OF MEASUREMENT 10-1-93  
MEASURING POINT TOP ELEV. \_\_\_\_\_  
WATER LEVEL INSTRUMENT USED SOLINST  
INITIAL WATER LEVEL (FT) 20.04  
LINEAR FEET OF WATER 10.66  
LINEAR FEET SATURATED GRAVEL PACK 10.66

ITEM	WATER VOLUME	
	FT <sup>3</sup>	GAL
WELL CASING		<u>6.95</u>
GRAVEL PACK		<u>—</u>
DRILLING FLUIDS		<u>—</u>
TOTAL		<u>6.95</u>

NOTE: QUANTITIES ARE TO BE CALCULATED PRIOR TO DEVELOPMENT.

### DEVELOPMENT CRITERIA

METHOD OF DEVELOPMENT TEFLON BAULER  
WATER QUALITY MEASUREMENTS ☒ YES ☐ NO  
WELL VOLUME (ANNULUS) (GAL) \_\_\_\_\_ WELL CASING VOLUME (PIPE) (GAL) 6.95  
WATER VOLUME TO BE REMOVED (GAL) MINIMUM 34.75 MAXIMUM \_\_\_\_\_

NOTE: DEVELOPMENT IS TO BE PERFORMED IN ACCORDANCE WITH PROJECT-SPECIFIC WELL  
DEVELOPMENT PLAN.

### WATER QUALITY INSTRUMENTS

DATE	INSTRUMENT	SERIAL NO.	CALIBRATION PERFORMED (//)	TECH	COMMENTS
<u>10-1-93</u>	<u>HYDAC</u>		<u>✓</u>	<u>W.S.</u>	

COMMENTS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE 9.30.93WELL NO. MW-3

## DEVELOPMENT TECHNIQUES

DATE	DEVELOPMENT METHOD	MATERIAL OR SERIAL NO.	DEVELOPMENT TECHNICIAN	VOLUMES REMOVED/TYPE
9.30.93	REFLOW BAKER		R.T.	

## WATER QUALITY/WATER REMOVAL

## WATER QUALITY READINGS

## WATER REMOVAL DATA

DATE	TIME	TOTAL INCREMENT GALLONS REMOVED	TOTAL WELL INCREMENT VOLUMES REMOVED	TEMP (°C)	PH	CONDUCTIVITY (umhos/cm)	APPEARANCE/ COMMENTS	DEVELOPMENT START TIME	DEVELOPMENT STOP TIME	REMOVAL RATE (GPM)	PUMP INTAKE LEVEL	WATER LEVEL BEFORE DEVELOPMENT	WATER LEVEL AFTER DEVELOPMENT
9.30.93	1009	5	5	62.2	7.88	2420	DARK BROWN	9.55			22.2	14.9	
	1017	10	5	60.2	7.03	1.980	LIGHT BROWN						
	1030	15	5	58.7	7.21	2000	LIGHT BROWN						
9.30.93	1038	20	5	59.2	7.12	2040	CLOUDY		1040				20.50

COMMENTS \* Failed dry after 10 gallons 1017. \*\* Failed dry after 5 additional gallons removed. \*\*\* Failed dry after 20 total gallons removed

## NOTES:

1. COMMENTS SHOULD DELINEATE FINAL SAMPLE AND REPLICATE MEASUREMENTS.
2. ANY INSTRUMENTATION CALIBRATION OR USE ANOMALIES SHOULD BE NOTED.
3. APPEARANCE SHOULD BE NOTED BEFORE, DURING, AND AFTER DEVELOPMENT.



BURLINGTON  
ENVIRONMENTAL

# WELL DEVELOPMENT & PURGING GENERAL DATA

SERIAL NO. WD \_\_\_\_\_  
PAGE 1 OF 1

PROJECT NAME CHACO WELL NO. MW-3  
PROJECT NO. 10942 MAJOR TASK 2002 SUB TASK 77  
DATE 9/30/93 FORM COMPLETED BY ROBERT THOMPSON

## WELL CONSTRUCTION

TOTAL DEPTH (FT) 22.27 BOREHOLE DIAMETER (IN) 10"  
GRAVEL PACK INTERVAL (FT) 17' WELL DIAMETER INSIDE (IN) 4"  
WELL PROTECTOR: ☒ YES ☐ NO PADLOCK NO. 2532  
QUANTITY OF FLUID INJECTED DURING DRILLING (GALLONS) N/A

## WATER VOLUME CALCULATION

DATE OF MEASUREMENT 9-30-93  
MEASURING POINT TOR ELEV. \_\_\_\_\_  
WATER LEVEL INSTRUMENT USED SDUNST  
INITIAL WATER LEVEL (FT) 16.90  
LINEAR FEET OF WATER 5.37  
LINEAR FEET SATURATED GRAVEL PACK 5.37

ITEM	WATER VOLUME	
	FT <sup>3</sup>	GAL
WELL CASING		3.5
GRAVEL PACK		
DRILLING FLUIDS		
TOTAL		3.5

NOTE: QUANTITIES ARE TO BE CALCULATED PRIOR TO DEVELOPMENT.

## DEVELOPMENT CRITERIA

METHOD OF DEVELOPMENT TEFLON BAILER  
WATER QUALITY MEASUREMENTS ☒ YES ☐ NO  
WELL VOLUME (ANNULUS) (GAL) N/A WELL CASING VOLUME (PIPE) (GAL) 3.5  
WATER VOLUME TO BE REMOVED (GAL) MINIMUM 12.5 MAXIMUM 35.0

NOTE: DEVELOPMENT IS TO BE PERFORMED IN ACCORDANCE WITH PROJECT-SPECIFIC WELL  
DEVELOPMENT PLAN.

## WATER QUALITY INSTRUMENTS

DATE	INSTRUMENT	SERIAL NO.	CALIBRATION PERFORMED (U)	TECH	COMMENTS
9-30-93	HYDRA CONDUCTIVITY, TEMP., PH., TESTER		✓	R.T.	

COMMENTS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE 10, 1, 93WELL NO. MW-2

## DEVELOPMENT TECHNIQUES

DATE	DEVELOPMENT METHOD	MATERIAL OR SERIAL NO.	DEVELOPMENT TECHNICIAN	VOLUMES REMOVED/TYPE
10-1-93	TEFLON BALLER		WILL SMITH	

## WATER QUALITY/WATER REMOVAL

## WATER QUALITY READINGS

## WATER REMOVAL DATA

DATE	TIME	TOTAL INCREMENT GALLONS REMOVED	TOTAL WELL INCREMENT VOLUMES REMOVED	TEMP (°C)	PH	CONDUCTIVITY (umhos/cm)	APPEARANCE/ COMMENTS	DEVELOPMENT START TIME	DEVELOPMENT STOP TIME	REMOVAL RATE (GPM)	PUMP INTAKE LEVEL	WATER LEVEL BEFORE DEVELOPMENT	WATER LEVEL AFTER DEVELOPMENT
10-1-93	1015	5	5	64.2	7.20	2090	LIGHT BROWN	1009				17.74	
	1036	10	15	64.2	7.59	2,040	LIGHT BROWN						
	1043	15	5	63.1	7.60	2,050	LIGHT BROWN						
	1051	20	5	62.9	7.62	2,140	LIGHT BROWN						
	1056	25	5	62.0	7.67	2,100	LIGHT BROWN						
	1104	30	5	62.5	7.74	2,180	CLOUDY						
	1112	35	5	63.7	7.67	2,260	CLOUDY		1112				24.90

COMMENTS \_\_\_\_\_

## NOTES:

1. COMMENTS SHOULD DELINEATE FINAL SAMPLE AND REPLICATE MEASUREMENTS.
2. ANY INSTRUMENTATION CALIBRATION OR USE ANOMALIES SHOULD BE NOTED.
3. APPEARANCE SHOULD BE NOTED BEFORE, DURING, AND AFTER DEVELOPMENT.



BURLINGTON  
ENVIRONMENTAL

## WELL DEVELOPMENT & PURGING GENERAL DATA

SERIAL NO. WD \_\_\_\_\_

PAGE \_\_\_\_ OF \_\_\_\_

PROJECT NAME CHACO WELL NO. MW-2  
PROJECT NO. \_\_\_\_\_ MAJOR TASK 2002 SUB TASK 77  
DATE 10-1-93 FORM COMPLETED BY WILL SMITH

### WELL CONSTRUCTION

TOTAL DEPTH (FT) 27.47 BOREHOLE DIAMETER (IN) 10"  
GRAVEL PACK INTERVAL (FT) 17' WELL DIAMETER INSIDE (IN) 4"  
WELL PROTECTOR: ☒ YES ☐ NO PADLOCK NO. 2532  
QUANTITY OF FLUID INJECTED DURING DRILLING (GALLONS) N/A

### WATER VOLUME CALCULATION

DATE OF MEASUREMENT 10-1-93  
MEASURING POINT TOR ELEV. \_\_\_\_\_  
WATER LEVEL INSTRUMENT USED SOLINST  
INITIAL WATER LEVEL (FT) 17.74  
LINEAR FEET OF WATER 9.73  
LINEAR FEET SATURATED GRAVEL PACK 9.73

ITEM	WATER VOLUME	
	FT <sup>3</sup>	GAL
WELL CASING		<u>6.35</u>
GRAVEL PACK		<u>—</u>
DRILLING FLUIDS		<u>—</u>
TOTAL		<u>6.35</u>

NOTE: QUANTITIES ARE TO BE CALCULATED PRIOR TO DEVELOPMENT.

### DEVELOPMENT CRITERIA

METHOD OF DEVELOPMENT TEFLON BAULER  
WATER QUALITY MEASUREMENTS ☒ YES ☐ NO  
WELL VOLUME (ANNULUS) (GAL) N/A WELL CASING VOLUME (PIPE) (GAL) 6.35  
WATER VOLUME TO BE REMOVED (GAL) MINIMUM 31.75 MAXIMUM 63.5

NOTE: DEVELOPMENT IS TO BE PERFORMED IN ACCORDANCE WITH PROJECT-SPECIFIC WELL  
DEVELOPMENT PLAN

### WATER QUALITY INSTRUMENTS

DATE	INSTRUMENT	SERIAL NO.	CALIBRATION PERFORMED (Y)	TECH	COMMENTS
<u>10-1-93</u>	<u>HYDRO CONDUCTIVITY TEMP DI</u>		<u>✓</u>	<u>W.S.</u>	

COMMENTS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE 9.30.93WELL NO. MW-1

## DEVELOPMENT TECHNIQUES

DATE	DEVELOPMENT METHOD	MATERIAL OR SERIAL NO.	DEVELOPMENT TECHNICIAN	VOLUMES REMOVED/TYPE
9.30.93	TEFLON BAILER		R.T.	

## WATER QUALITY/WATER REMOVAL

## WATER QUALITY READINGS

## WATER REMOVAL DATA

DATE	TIME	TOTAL INCREMENT GALLONS REMOVED	TOTAL WELL INCREMENT VOLUMES REMOVED	TEMP (°C)	pH	CONDUCTIVITY (umhos/cm)	APPEARANCE/ COMMENTS	DEVELOPMENT START TIME	DEVELOPMENT STOP TIME	REMOVAL RATE (GPM)	PUMP INTAKE LEVEL	WATER LEVEL BEFORE DEVELOPMENT	WATER LEVEL AFTER DEVELOPMENT
9.30.93	1100	5	5	58.9	7.29	1,940	CLOUDY	1050			25.24	13.20	
	1104	10	5	58.8	7.20	1,870	CLOUDY						
	1109	15	5	58.4	7.12	1,880	CLOUDY						
	1124	20	5	58.9	7.15	1,980	CLOUDY						
	1213	25	5	59.7	7.54	1,990	CLOUDY						
9.30.93	1303	30	5	60.1	7.55	2,170	CLEAR		1305				21.04

COMMENTS \_\_\_\_\_

## NOTES:

1. COMMENTS SHOULD DELINEATE FINAL SAMPLE AND REPLICATE MEASUREMENTS.
2. ANY INSTRUMENTATION CALIBRATION OR USE ANOMALIES SHOULD BE NOTED.
3. APPEARANCE SHOULD BE NOTED BEFORE, DURING, AND AFTER DEVELOPMENT.





BURLINGTON  
ENVIRONMENTAL

# WELL DEVELOPMENT & PURGING GENERAL DATA

SERIAL NO. WD \_\_\_\_\_  
PAGE 1 OF 1

PROJECT NAME CHACO WELL NO. MW-1  
PROJECT NO. 10942 MAJOR TASK 2002 SUB TASK 77  
DATE 9/30/93 FORM COMPLETED BY ROBERT THOMPSON

## WELL CONSTRUCTION

TOTAL DEPTH (FT) 25.24 BOREHOLE DIAMETER (IN) 10"  
GRAVEL PACK INTERVAL (FT) 17' WELL DIAMETER INSIDE (IN) 4"  
WELL PROTECTOR: ☒ YES ☐ NO PADLOCK NO. 2532  
QUANTITY OF FLUID INJECTED DURING DRILLING (GALLONS) N/A

## WATER VOLUME CALCULATION

DATE OF MEASUREMENT 9.30.93  
MEASURING POINT TD R ELEV. \_\_\_\_\_  
WATER LEVEL INSTRUMENT USED SOLINST  
INITIAL WATER LEVEL (FT) 13.70  
LINEAR FEET OF WATER 11.54  
LINEAR FEET SATURATED GRAVEL PACK 11.54

ITEM	WATER VOLUME	
	FT <sup>3</sup>	GAL
WELL CASING		7.53
GRAVEL PACK		—
DRILLING FLUIDS		—
TOTAL		7.53

NOTE: QUANTITIES ARE TO BE CALCULATED PRIOR TO DEVELOPMENT.

## DEVELOPMENT CRITERIA

METHOD OF DEVELOPMENT TEFLON BAILER  
WATER QUALITY MEASUREMENTS ☒ YES ☐ NO  
WELL VOLUME (ANNULUS) (GAL) N/A WELL CASING VOLUME (PIPE) (GAL) 7.53  
WATER VOLUME TO BE REMOVED (GAL) MINIMUM 37.65 MAXIMUM 75.3

NOTE: DEVELOPMENT IS TO BE PERFORMED IN ACCORDANCE WITH PROJECT-SPECIFIC WELL  
DEVELOPMENT PLAN

## WATER QUALITY INSTRUMENTS

DATE	INSTRUMENT	SERIAL NO.	CALIBRATION PERFORMED (✓)	TECH	COMMENTS
9/30/93	HYDRA CONDUCTIVITY TEMP. PH. TESTER		✓	R.T.	

COMMENTS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_





# Well Development and Purging Data

BURLINGTON ENVIRONMENTAL Serial No. WDPD-

☒ Development  
☐ Purging

Well Number

MW-6

Page 1 of 1

Project Name

CHACO

Project Manager

SCOTT POPE

Project No.

12588

Client Company

BURLINGTON ENVIRONMENTAL

Phase Task No.

2001 77

Site Name

CHACO PLANT

Site Address

## Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal  
☒ Stabilization of Indicator Parameters  
☐ Other

## Water Volume Calculation

Initial Depth of Well (feet) 24.53  
Initial Depth to Water (feet) 11.59  
Height of Water Column in Well (feet) 12.94  
Diameter (inches): Well 4 Gravel Pack 20

## Methods of Development

- Pump  
☐ Centrifugal  
☐ Submersible  
☐ Peristaltic  
☐ Other
- Bailer  
☒ Bottom Valve  
☐ Double Check Valve  
☐ Stainless-steel Kemmerer  
☐ Other

## Instruments

- Serial No. (if applicable)
- ☒ pH Meter  
☐ DO Monitor  
☒ Conductivity Meter  
☒ Temperature Meter  
☐ Other

## Water Disposal

## Water Removal Data

Date	Time	Divulvement Method	Pump/Bailer	Start Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume (gallons)		Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Comments
						Increment	Cumulative	Increment	Cumulative					
6-29-94	13:55	X		24.53		.25	.25			67.5	8.01	5470		TAN
	14:04	X				.25	5.0			66.4	8.21	4,980		LIGHT TAN
	14:14	X				.25	10.0			65.3	8.30	4,790		LIGHT TAN
	14:23	X				.25	15.0			65.7	8.36	5,040		CLOUDY
	14:30	X				.25	20.0			64.2	8.40	5,300		CLOUDY
	14:39	X				.25	25.0			64.1	8.41	6,120		CLOUDY
	15:01	X				.25	30.0			65.7	8.11	5,260		<del>HEAVY</del> MILKY
V	15:40	X			21.40	.25	35.0			62.9	8.21	4,710		LIGHT CLOUDINESS

Circle the date and time that the development criteria are met.

Comments BAILED WELL DOWN AFTER 25 GAL LEFT WELL TO RECOVER. MOVED BACK TO MW-5.

BAILED WELL DOWN AGAIN AT 350 GAL. COMPLETED DEVELOPMENT AT 1548. SLOW RECOVERY.

Developer's Signature(s)

Robert Thompson

Date 6-29-94

Reviewer STP

Date 7/7/94



# Well Development and Purging Data

BURLINGTON ENVIRONMENTAL Serial No. WDPD-

☒ Development  
☐ Purging

Well Number

MW-7

Page 1 of 1

Project Name

CHACO

Project Manager

SCOTT POPE

Project No.

Client Company

BURLINGTON ENVIRONMENTAL

Phase Task No.

2001.77

Site Name

CHACO PLANT

Site Address

## Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal  
☒ Stabilization of Indicator Parameters  
☐ Other

## Water Volume Calculation

Initial Depth of Well (feet) 19.60  
Initial Depth to Water (feet) 7.55  
Height of Water Column in Well (feet) 12.05  
Diameter (inches): Well 4 Gravel Pack 10

## Methods of Development

- Pump ☐ Bailor  
☐ Centrifugal ☒ Bottom Valve  
☐ Submersible ☐ Double Check Valve  
☐ Peristaltic ☐ Stainless-steel Kemmerer  
☐ Other

## Instruments

- Serial No. (if applicable)  
☒ pH Meter  
☐ DO Monitor  
☒ Conductivity Meter  
☒ Temperature Meter  
☐ Other

## Water Disposal

## Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Initial Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)	Incremental	Cumulative	Radius Volume Removed (gallons)	Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-30-94	0907	X		19.60		.25	.25	2.5		64.4	7.76	3,220		TAN WATER
	0916	X				.25	.25	5.0		63.0	7.91	2,880		TAN
	0920	X				.25	.25	10.0		62.4	7.86	3,010		LIGHT TAN
	0924	X				.25	.25	15.0		62.4	7.85	3,060		LIGHT TAN
	0931	X				.25	.25	20.0		62.4	7.93	3,080		LIGHT TAN
	0938	X				.25	.25	25.0		62.8	7.87	3,110		CLOUDY
	0945	X				.25	.25	30.0		63.3	7.89	3,110		CLOUDY
	0952	X				.25	.25	35.0		63.6	7.90	3,150		SLIGHTLY CLOUDY
	0959	X			9.90	.25	.25	40.0		63.7	7.93	3,190		SLIGHTLY CLOUDY
Total														
										39.35				

at this date and time that the development criteria are met.

ments BAILED 5 CU'S OUT OF WELL. WELL PRODUCES GOOP AND RECOVERS FAST. INDICATOR PARAMETERS STABILIZED AND WATER WAS FAIRLY CLEAR. COMPLETED DEVELOPMENT AT 10:09

Operator's Signature(s)

Robert Thompson

Date

6-30-94

Reviewer

Date



# Well Development and Purging Data

☐ Development  
☒ Purging

Well Number mw-8

Serial No. WDPD-

Page 1 of 1

Project Name FRUG PITS

Project Manager Carl Chance

Project No. 14509

Client Company EL Paso Natural Gas

Phase Task No. 6003

Site Name Chico Plant mw-8

Site Address Chico Plant

## Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal  
☐ Stabilization of Indicator Parameters  
☐ Other

## Methods of Development

- Pump ☐ Centrifugal ☒ Bottom Valve  
☐ Submersible ☐ Double Check Valve  
☐ Peristaltic ☐ Stainless-steel Kemmerer  
☐ Other

## Water Volume Calculation

Initial Depth of Well (feet) 276  
Initial Depth to Water (feet) 1739 Top  
Height of Water Column in Well (feet) 1021  
Diameter (Inches): Well 4 Gravel Pack                     

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		<u>60.6</u>	<u>60.6 x 5</u>
Gravel Pack			
Drilling Fluids			
Total			<u>33</u>

## Instruments

- Serial No. (If applicable) 44220  
☒ pH Meter  
☐ DO Monitor  
☒ Conductivity Meter  
☒ Temperature Meter  
☐ Other

## Water Disposal

Returned + Transported to KUTZ Separation in Brownfield

## Water Removal Data

Date	Time	Development Method Pump Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Predicted Volume Removed (gallons)		Temperature (°F)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Comments
						Increment	Cumulative	Increment	Cumulative					
10-16-91	1140	X				5	5			65.7	7.74	3.53		USGWS + SILTY
	1150					5	10			64.2	7.72	3.64		
	1205					10	20			65.6	8.01	3.72		
	1217					10	30			63.4	8.0	3.67		
10-16-91	1230	X				5	35			62.6	7.81	3.63		USGWS + SILTY

Circle the date and time that the development criteria are met.

Comments No other detected

Developer's Signature(s) [Signature]

Date 10-16-91

Reviewer                     

Date



# Water Sampling Data

Location No. mw-8Serial No. WSD-Group List Number           Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other            Date 10-16-95Project Name BRNG PITS Project No. 14509Project Manager Cory Chance Phase/Task No. 6003 . 61Site Name Chessa Plant mw-8

## Sampling Specifications

Requested Sampling

Depth Interval (feet) TOP 3'

Requested Wait Following

Development/Purging (hours)           

## Initial Measurements

Time Elapsed From Final Development/Purging (<sup>min</sup>hours) 15Initial Water Depth (feet) 17.39Nonaqueous Liquids Present (Describe) none

## Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data					Notes (Explain in Comments Below)
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/ cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Bail	Final Water Depth (feet)	
see	well	DEVELOPMENT & PURGING				DATA FORM						

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

## Sample Containers

Preservatives: H = HCl; N = HNO<sub>3</sub>; S = H<sub>2</sub>SO<sub>4</sub>; A = NaOH; O = Other (Specify); - = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
BTEX	2	G	40		X	H	X		JAL: 23
TDS	1	P	250		X	NHCL	X		JAL: 23

Filter Type            Chain-of-Custody Form Number           Comments           Signature James [Signature] Date 10-16-95 Reviewer            Date

DEEP WELL GEOLOGICAL DATA

September 1, 1992

COMPANY El Paso Natural Gas Company

COUNTY San Juan STATE N.M.

CONTRACT NO. 5848

UNIT NO. CPS 296-6

LOCATION Chaco Sta. - 20 miles S. of Farmington, N.M.

GROUNDBED: Depth 500 Ft., Dia. 7 7/8 In., Anodes (25) 2 x 60

CASING: Size 8 5/8 In., Depth 100 Ft. Anotec SHA-2

DEPTH FT.	DRILLER'S LOG	RESISTIVITY OHMS AMPS		ANODE NUMBER	DEPTH TO ANODE TOP	BEFORE COKE	AFTER COKE
5	Top Soil						
10	"						
15	Sand						
20	"						
25	"						
30	Blue Shale						
35	"						
40	"						
45	"						
50	"						
55	"						
60	"						
65	"						
70	"						
75	"						
80	"						
85	"						
90	"						
95	"						
100	"						
105	Sandstone		1.1				
110	"		0.9				
115	"		0.9				
120	"		0.9				
125	Water		0.8				
130	"		1.0				
135	Sandstone		1.7				
140	"		1.4				
145	Blue Clay & Shale		1.7				
150	"		1.7				
155	"		2.0				
160	"		1.8				
165	"		1.8				
170	"		1.8				
175	"		1.8				
180	"		1.8				
185	"		1.7				
190	"		1.7	25		2.5	7.9
195	"		1.8				
200	"		1.6	24		1.7	7.8
205	"		1.5				
210	"		1.5	23		2.4	7.8
215	"		1.3				
220	"		1.4	22		1.8	6.6
225	"		1.6				
230	"		1.8	21		2.4	6.3
235	"		1.7				
240	Blue Clay & Shale		1.7	20		2.3	6.3

DEPTH -T.	DRILLER'S LOG	RESISTIVITY OHMS	AMPS	ANODE NUMBER	DEPTH TO ANODE TOP	BEFORE COKE	AFTER COKE
245	Blue Clay & Shale		1.6				
250	"		1.6	19		1.9	6.9
255	"		1.5				
260	"		1.5	18		1.9	5.9
265	"		1.6				
270	"		1.6	17		2.0	6.3
275	"		1.5				
280	"		1.5	16		1.9	6.5
285	"		1.6				
290	"		1.5	15		1.7	5.7
295	"		1.0				
300	"		1.6				
305	Sandstone & Blue Shale		1.5	14		1.9	5.6
310	"		1.0				
315	"		0.9				
320	"		1.0				
325	"		1.0				
330	"		0.9				
335	"		0.9				
340	"		1.6				
345	"		1.5	13		1.7	5.8
350	"		0.9				
355	Sandstone		1.6	12		1.8	6.0
360	"		1.3				
365	Blue Clay & Shale		1.6	11		2.1	5.8
370	"		1.9				
375	"		1.5	10		1.8	5.9
380	"		1.6				
385	"		1.6	9		1.9	6.5
390	"		1.8				
395	"		1.7	8		2.0	6.5
400	"		1.5				
405	"		1.4	7		1.7	6.3
410	"		1.5				
415	"		1.5	6		1.8	5.9
420	"		1.4				
425	"		1.3	5		1.6	5.1
430	"		1.1				
435	"		0.9				
440	"		1.2				
445	"		1.7				
450	"		1.4	4		1.7	5.4
455	"		1.0				
460	"		0.8				
465	"		1.4				
470	"		1.5	3		1.8	5.8
475	"		1.7				
480	"		1.6	2		1.8	5.9
485	"		1.6				
490	"		1.6	1		2.0	6.0
495	"		1.7				
500	Blue Clay & Shale		1.7				
505							
510							

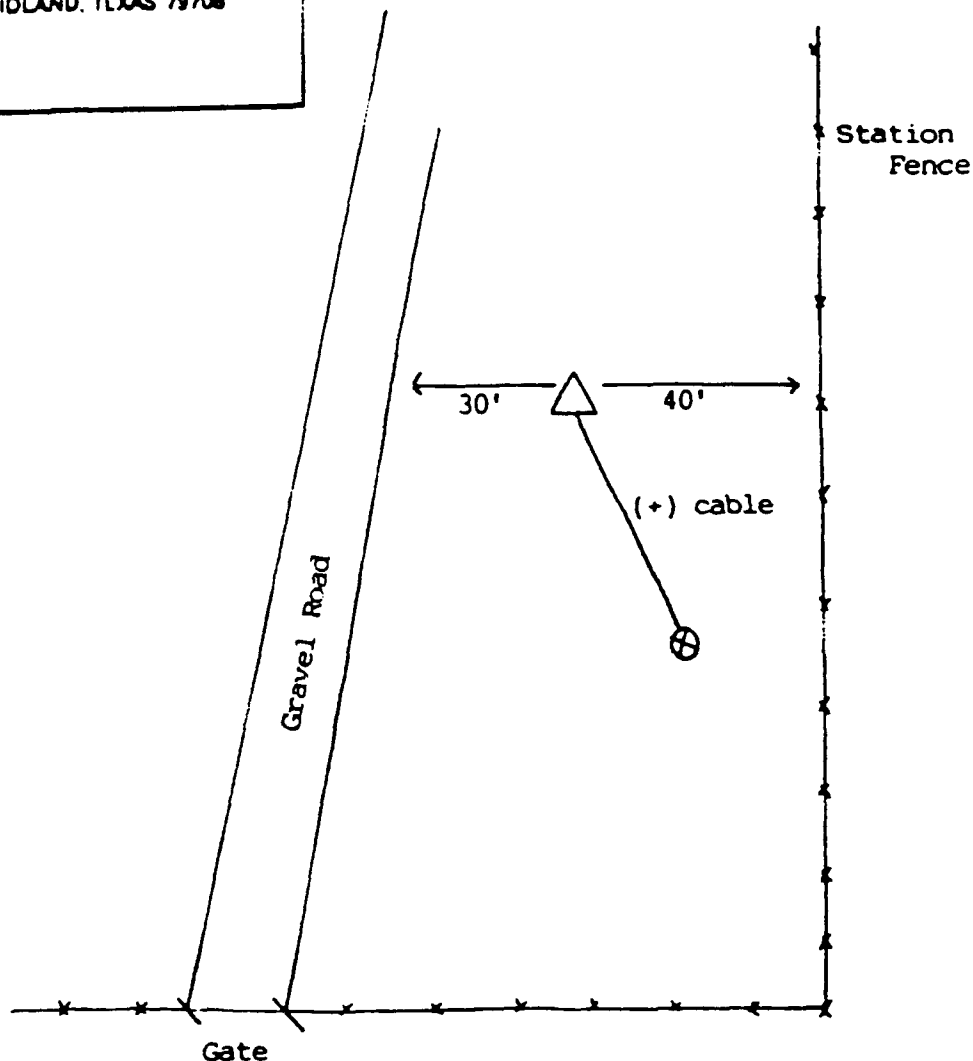




THE LOFT COMPANY

P O BOX 7847  
MIDLAND, TEXAS 79708

AS-BUILT



LEGEND



Groundbed



Rectifier



Negative



Junction Box



Marker/Vent



Old Groundbed

LOCATION: CPS 296-6, Chaco Station  
San Juan County, N.M.  
20 mi. S. of Farmington, N.M.

CLIENT: El Paso Natural Gas Company

PROJECT: Cathodic Protection System  
Contract #5848

DATE COMPLETED: 09/10/92

NOT TO SCALE

DATE DRILLED: 09/01/92

DRAWN BY: JM/MI

APPROVED BY: MFL

DRAWING NO.:

1

M1142

DEEP WELL GROUND DATA

DATE 9-3-92COMPANY E.P.N.G.COUNTY S.I. STATE N.M.CONTRACT NO. I 3242UNIT NO. 296-7LOCATION chaco PLANTGROUNDBED: Depth 500 Ft., Dia. 7 7/8 In., Anodes 25CASING: Size 2 5/8 In., Depth 100 Ft.

DEPTH FT.	DRILLER'S LOG	RESISTIVITY OHMS AMPS		ANODE NUMBER	DEPTH TO ANODE TOP	BEFORE COKE	AFTER COKE
5	SAND						
10							
15							
20							
25							
30							
35							
40							
45							
50							
55	blue shale						
60							
65							
70							
75							
80							
85							
90							
95							
100							
105	sandstone		2.4				
110			1.7				
115			1.7				
120			1.4				
125			1.1				
130			1.0				
135			1.5				
140			1.5				
145			1.2				
150			1.4				
155	Blue shale & sandstone		1.5				
160			2.1	25		3.2	5.8
165			2.1	24		3.1	5.7
170			2.6				
175			2.7				
180			2.8				
185			2.8				
190			2.7				
195			2.6				
200			2.4	23		3.1	6.4
205			2.6	22		3.4	6.5
210			2.9				
215			3.3	21		3.7	6.4
220			2.1	20		2.8	6.1
225			2.6				
230			2.2	19		3.1	6.6
235			2.5	18		3.6	7.0
240			2.6				

DATE

UNIT NUMBER

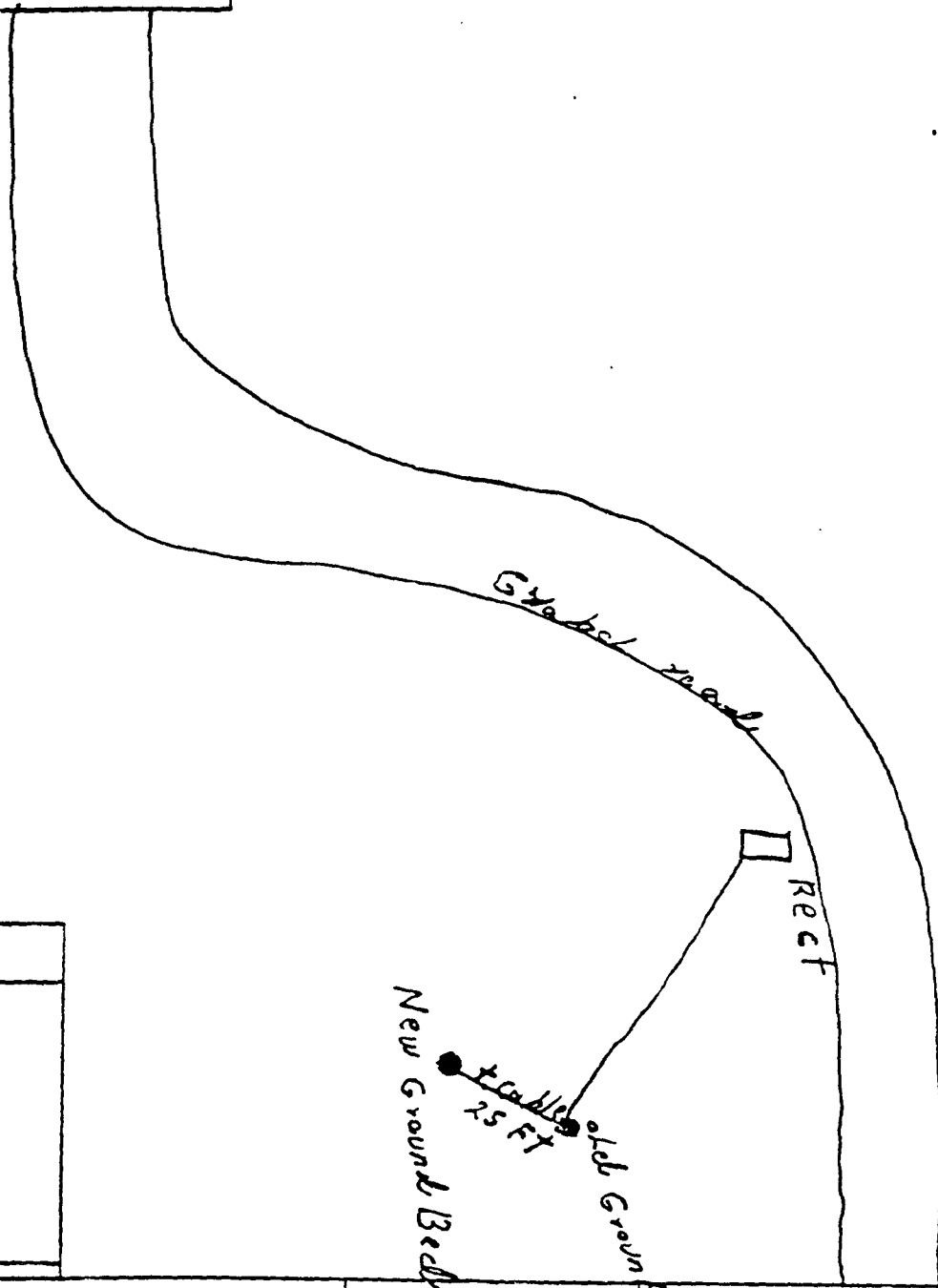
ATION

DEPTH T.	DRILLER'S LOG	RESISTIVITY OHMS	AMPS	ANODE NUMBER	DEPTH TO ANODE TOP	BEFORE COKE	AFTER COKE
245	Blue Shale & sandstone		2.5	17		3.8	6.8
250			2.4	16		3.5	6.6
255			1.9	15		2.9	5.8
260			1.2				
265			1.0				
270			1.1				
275			1.5				
280			1.7				
285			1.3	14		2.4	4.7
290			1.5				
295			1.8				
300			2.4	13		3.3	6.1
305			2.4	12		3.4	6.0
310			1.9				
315			1.4				
320			1.3				
325			1.4				
330			1.3				
335			2.1	11		2.8	4.7
340			1.7				
345			1.3				
350			1.7				
355			2.8				
360			2.2	10		2.1	5.3
365			1.6				
370			2.0	9		2.5	5.1
375			2.5	8		3.3	5.4
380			1.6				
385			1.3				
390			1.4	8			
395			2.4	7		3.0	5.2
400			2.6				
405			2.4	6		3.2	5.6
410			2.1	5		2.7	5.2
415			1.6				
420			1.5				
425			1.6				
430			1.7				
435			2.0				
440			2.1	4		2.5	5.4
445			2.5	3		3.2	5.7
450			1.7				
455			1.3				
460			1.5				
465			1.6				
470			1.6				
475			1.6				
480			2.2	2		2.8	5.6
485			2.4	1		3.0	5.5
490			2.2				
495			2.0				
500			2.2				
505							
510							



THE LOFTIS COMPANY

P. O. BOX 7847  
MIDLAND, TEXAS 79708



LEGEND

LOCATION:

*chaco Plant*

CLIENT:

*E.P.N.E*

PROJECT:

DATE COMPLETED:

*9-2-92*

NOT TO SCALE

DATE DRILLED:

DRAWN BY:

APPROVED BY:

DRAWING NO.:

## DEEP WELL GROUND BED DATA

DATE September 9, 1992COMPANY El Paso Natural Gas CompanyCOUNTY Juan STATE N.M.CONTRACT NO. 5848UNIT NO. SPS 296-8LOCATION Chaco Station - 20 miles S. of Farmington, N.M.GROUNDBED: Depth 500 Ft., Dia. 7 7/8 In., Anodes (25) 2 x 60CASING: Size 8 5/8 In., Depth 100 Ft. Anotec SHA-2

DEPTH FT.	DRILLER'S LOG	RESISTIVITY OHMS AMPS		ANODE NUMBER	DEPTH TO ANODE TOP	BEFORE COKE	AFTER COKE
5	Sand						
10	"						
15	"						
20	"						
25	"						
30	"						
35	"						
40	"						
45	"						
50	Sandstone & Shale						
55	"						
60	"						
65	"						
70	"						
75	"						
80	"						
85	"						
90	"						
95	"						
100	Sandstone						
105	"		1.5				
110	"		1.0				
115	"		0.9				
120	Water Sand		0.9				
125	"		0.9				
130	"		1.1				
135	Sandstone & Shale		1.4				
140	"		1.4				
145	"		1.6				
150	"		1.5				
155	"		1.3				
160	"		1.3				
165	"		1.4				
170	"		1.5				
175	"		1.5				
180	"		1.5	25		1.8	2.4
185	"		1.5				
190	"		1.5	24		1.7	2.4
195	"		1.5				
200	"		1.4	23		1.6	2.4
205	"		1.2				
210	"		1.3	22		1.5	2.3
215	"		1.4				
220	"		1.4	21		1.6	2.3
225	"		1.4				
230	"		1.3	20		1.4	2.3
235	"		1.4				
240	Sandstone & Shale		1.3	19		1.5	2.2

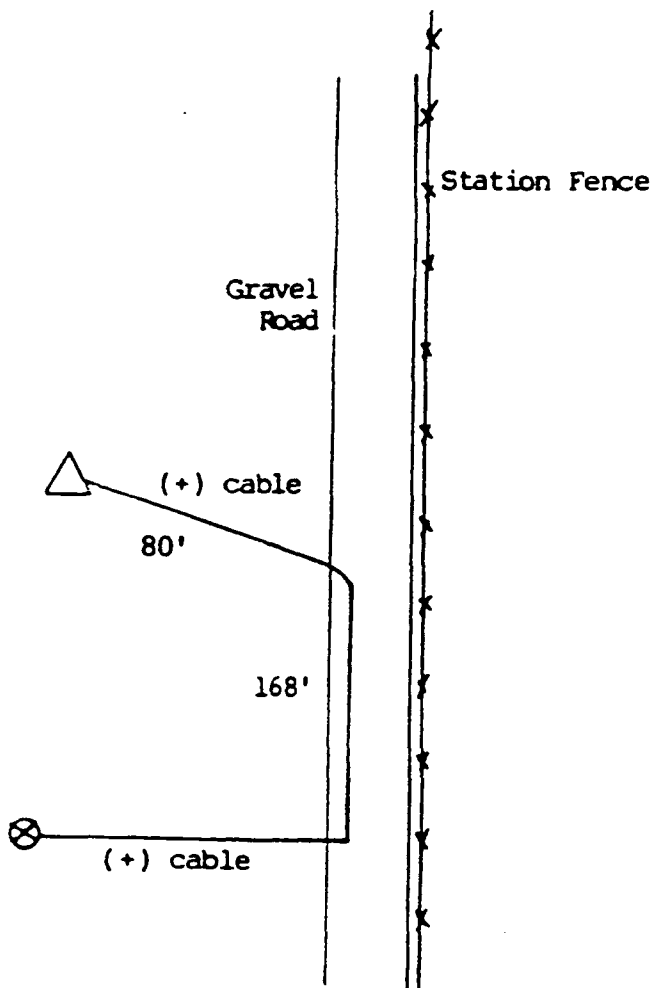
DEPTH FT.	DRILLER'S LOG	RESISTIVITY		A.M. NUMBER	DEPTH TO ANODE TOP	BEFORE COKE	AFTER COKE
		OHMS	AMPS				
245	Sandstone & Shale		1.2				
250	"		1.2	18		1.3	2.0
255	"		1.2				
260	Rock		0.9				
265	"		0.7				
270	"		0.8				
275	Shale		1.2				
280	"		1.0				
285	"		0.9				
290	Rock		0.9				
295	"		1.1				
300	"		1.4	17		1.7	2.3
305	Sandstone & Shale		1.5				
310	"		1.3	16		1.5	2.2
315	"		1.0				
320	"		0.9				
325	"		0.9				
330	"		1.2				
335	"		1.3	15		1.5	2.2
340	"		1.4				
345	"		1.4	14		1.6	2.3
350	"		1.5				
355	"		1.3	13		1.4	2.2
360	"		1.4				
365	"		1.2	12		1.2	1.8
370	"		1.1				
375	"		1.3				
380	"		1.4	11		1.5	2.2
385	"		1.4				
390	"		1.5	10		1.6	2.1
395	"		1.5				
400	"		1.5	9		1.6	2.2
405	"		1.5				
410	"		1.4	8		1.4	2.1
415	"		1.3				
420	"		1.3	7		1.3	2.1
425	"		1.2				
430	"		1.2	6		1.2	2.1
435	"		1.1				
440	"		1.1				
445	"		1.3				
450	"		1.4	5		1.3	2.2
455	"		1.3				
460	"		1.2	4		1.3	2.1
465	"		1.1				
470	"		1.4	3		1.5	2.1
475	"		1.5				
480	"		1.4	2		1.4	2.1
485	"		1.4				
490	"		1.3	1		1.3	1.9
495	"		1.3				
500	Sandstone & Shale		1.3				
505							
510							









THE LOFTIS COMPANY

P.O. BOX 7847  
MIDLAND, TEXAS 79708

AS-BUILT



LEGEND

-  Groundbed
-  Rectifier
-  Negative
-  Junction Box
-  Marker/Vent
-  Old Groundbed

LOCATION: CPS 296-8, Chaco Station  
San Juan County, N.M.  
20 mi. S. of Farmington, N.M.

CLIENT: El Paso Natural Gas Company

PROJECT: Cathodic Protection System  
Contract #5848

DATE COMPLETED: 09/09/92 NOT TO SCALE

DATE DRILLED: 09/09/92 DRAWN BY: JM/MI

APPROVED BY: MFL

DRAWING NO.:

3

M1142



Analytical **Technologies**, Inc.

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

ATI I.D. 510369

November 1, 1995

95/046 to 95/051

El Paso Natural Gas  
P.O. Box 4990  
Farmington, NM 87499

Project Name/Number: PIT CLOSURE/CHACO PLANT 24324

Attention: John Lambdin

On 10/18/95, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

All analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

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

Kimberly D. McNeill  
Project Manager

MR:jt

Enclosure

H. Mitchell Rubenstein, Ph.D.  
Laboratory Manager







Analytical**Technologies**,Inc.

CLIENT : EL PASO NATURAL GAS DATE RECEIVED : 10/18/95  
PROJECT # : 24324  
PROJECT NAME : PIT CLOSURE/CHACO PLANT REPORT DATE : 11/01/95

ATI ID: 510369

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	951046	NON-AQ	10/11/95
02	951047	NON-AQ	10/11/95
03	951048	NON-AQ	10/11/95
04	951049	NON-AQ	10/11/95
05	951050	NON-AQ	10/11/95
06	951051	NON-AQ	10/11/95
<del>07</del>	<del>951052</del>	<del>NON-AQ</del>	<del>10/12/95</del>
<del>08</del>	<del>951053</del>	<del>NON-AQ</del>	<del>10/12/95</del>
<del>09</del>	<del>951054</del>	<del>NON-AQ</del>	<del>10/12/95</del>
<del>10</del>	<del>951055</del>	<del>NON-AQ</del>	<del>10/12/95</del>
<del>11</del>	<del>951056</del>	<del>NON-AQ</del>	<del>10/12/95</del>
<del>12</del>	<del>951057</del>	<del>NON-AQ</del>	<del>10/12/95</del>
<del>13</del>	<del>951058</del>	<del>NON-AQ</del>	<del>10/12/95</del>
<del>14</del>	<del>951059</del>	<del>NON-AQ</del>	<del>10/12/95</del>
<del>15</del>	<del>951060</del>	<del>NON-AQ</del>	<del>10/12/95</del>
<del>16</del>	<del>951061</del>	<del>NON-AQ</del>	<del>10/12/95</del>



---TOTALS---

MATRIX  
NON-AQ

#SAMPLES  
16

ATI STANDARD DISPOSAL PRACTICE

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



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951046

BH #4

13-15 Feet

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/11/95

Lab Sample ID: 95-10-162-01

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	3	1
Barium	6010	10	10
Cadmium	6010	ND	0.5
Chromium	6010	1	1
Lead	6010	2.0	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected

X20 Limits

AS - 100 mg/Kg  
BA - 2000  
Cd - 20  
Cr - 100  
Pb - 100  
Hg - 4  
Se - 20  
Ag - 100 mg/Kg



Analytical Technologies, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951047

BH #4

20-22 Foot

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/11/95

Lab Sample ID: 95-10-162-02

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	3	1
Barium	6010	50	10
Cadmium	6010	ND	0.5
Chromium	6010	3	1
Lead	6010	18	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951048

BH #1

S-7 Foot

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/11/95

Lab Sample ID: 95-10-162-03

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	3	1
Barium	6010	80	10
Cadmium	6010	ND	0.5
Chromium	6010	4	1
Lead	6010	4.6	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951049

BH#1

30-32 Feet

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/11/95

Lab Sample ID: 95-10-162-04

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	2	1
Barium	6010	50	10
Cadmium	6010	ND	0.5
Chromium	6010	9	1
Lead	6010	12	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Lab Sample ID: 95-10-162-05

Sample Matrix: Soil

Sample ID

951050

BH #2

10-12-95

Date Collected: 10/11/95

Prep Date: 10/20, 24/95

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	ND	1
Barium	6010	20	10
Cadmium	6010	ND	0.5
Chromium	6010	1	1
Lead	6010	2.3	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical Technologies, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951051

BH#2

30-32 Foot

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/11/95

Lab Sample ID: 95-10-162-06

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	61	1
Barium	6010	40	10
Cadmium	6010	ND	0.5
Chromium	6010	3	1
Lead	6010	4.5	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Sample ID

Reagent Blank

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Date Collected: N/A

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Prep Date: 10/20, 24/95

Lab Sample ID: RB 95-10-162

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	ND	1
Barium	6010	ND	10
Cadmium	6010	ND	0.5
Chromium	6010	ND	1
Lead	6010	ND	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected

Detected  
10/23/95





Analytical Technologies, Inc.

# TOTAL METALS MATRIX SPIKE

Lab Name: Analytical Technologies, Inc.

Sample ID

951046

Client Name: ATI-NM

Lab Sample ID: 95-10-162-01

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Spike Added mg/kg	Sample Conc. mg/kg	MS Conc. mg/kg	% Rec (limits 80-120%)	Flags
Arsenic	200	3	200	99	
Barium	200	10	210	100	
Cadmium	5.0	< 0.5	4.9	98	
Chromium	20	1	22	105	
Lead	50	2.0	51	98	
Mercury	2.5	< 0.2	2.2	88	
Selenium	200	< 0.5	190	95	
Silver	20	< 1	21	105	

Analyte	MSD Conc. mg/kg	MSD % Rec (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Arsenic	200	99	0	
Barium	220	105	5	
Cadmium	5.0	100	2	
Chromium	22	105	0	
Lead	52	100	2	
Mercury	2.2	88	0	
Selenium	190	95	0	
Silver	21	105	0	

NETWORK PROJECT MANAGER: Kim McNeill Kim McNeill  
 COMPANY: **Analytical Technologies, Inc.**  
 ADDRESS: 2709-D Pan American Freeway, NE  
 Albuquerque, NM 87107

CLIENT PROJECT MANAGER: Kim McNeill

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
510369-01	10/11	0810	Soil	01
-02	10/11	0901		02
-03	10/11	1016		03
-04	10/11	1113		04
-05	10/11	1307		05
-06	10/11	1353		06
-07	10/12	0711		07
-08	10/12	0828		08
-09	10/12	0915		09

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJECT NUMBER: 510369	TOTAL NUMBER OF CONTAINERS		
PROJECT NAME: PFC CLOSURE C11A0 PLT	CHAIN OF CUSTODY SEALS		
QC LEVEL: STD IV	INTACT?		
QC REQUIRED: MS MSD BLANK	RECEIVED GOOD GOOD		
TAT: STANDARD RUSH	LAB NUMBER		
DUE DATE: 11/1			
RUSH SURCHARGE: No			
CLIENT DISCOUNT: 15 %			
11204-K111021			

RELINQUISHED BY:		RECEIVED BY: (LAB)	
Signature: <u>[Signature]</u>	Time: 5:15	Signature: <u>[Signature]</u>	Time: 9:00
Printed Name: <u>ANITA ELLER</u>	Date: 10/18/11	Printed Name: <u>[Signature]</u>	Date: 10/18/11
Company: <u>Analytical Technologies, Inc.</u>		Company: <u>ATI</u>	





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

PROJECT MANAGER: JOHNLAMBIDIN

COMPANY: EL PASO NATURAL GAS  
ADDRESS: P.O. BOX 4990  
FARMINGTON, NM 87499  
PHONE: (505) 599 2144  
FAX: (505) 599 2261

BILL TO: SAME AS ABOVE

COMPANY:   
ADDRESS:

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
951046	10/11/95	0810	SOIL	-01
951047	10/11/95	0904		-02
951048	10/11/95	1016		-03
951049	10/11/95	1113		-04
951050	10/11/95	1307		-05
951051	10/11/95	1353		-06
951058	10/12/95	0740		-07
951059	10/12/95	0828		-08
951060	10/12/95	0945	SOIL	-09

PROJECT INFORMATION

PROJ NO: 24324

PROJ NAME: PIT CLOSURE / PLANT

P.O. NO: 38822

SHIPPED VIA: FEDERAL EXPRESS

NO. CONTAINERS: 9

CUSTODY SEALS: PIN/NA

RECEIVED INTACT: Y

RECEIVED COLD: 40°F

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr (NORMAL) ☒ 2 WEEK

Com.ents: CHARGE CODE: 50% 108-51570-24-(XX)-012-31-2010  
50% 108-52452-24-(XX)-012-31-2010

QA/QC ON PROJECT SAMPLES

ANALYSIS REQUEST									
Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	BETX (8020)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Pesticides/PCB (608/8020)	Herbicides (615/8150)
									Base/Neutral/Acid Compounds GC/MS (625/8270)
									Volatile Organics GC/MS (624/8240)
									Polynuclear Aromatics (610/8310)
									SDWA Primary Standards - Arizona
									SDWA Secondary Standards - Arizona
									SDWA Primary Standards - Federal
									SDWA Secondary Standards - Federal
									The 13 Priority Pollutant Metals
									RCRA Metals by Total Digestion
									RCRA Metals by TCLP (1311)

SAMPLED & RELINQUISHED BY: 1. RELINQUISHED BY: 2.

Signature: [Signature] Time: 14:00 Signature: [Signature] Time: [ ]

Printed Name: Rhea Bays Printed Name: [ ]

Company: EL PASO NATURAL GAS Company: [ ]

RECEIVED BY: 1. RECEIVED BY: 2.

Signature: [Signature] Time: [ ] Signature: [Signature] Time: [ ]

Printed Name: [ ] Printed Name: [ ]

Company: [ ] Company: [ ]

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

PROJECT MANAGER:	JOHN LAMBORN
COMPANY:	EL PASO NATURAL GAS
ADDRESS:	P.O. BOX 4990 FARMINGTON, NM 87499
PHONE:	(505) 599 2144
FAX:	(505) 599 2261
BILL TO:	SAME AS ABOVE
COMPANY:	
ADDRESS:	

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
951061	10/12/95	1017	soil	-10
951062		1133		-11
951063		1219		-12
951064		1347		-13
951065	10/12/95	1423		-14
951066	10/12/95	1048		-15
951067	10/13/95	1349	soil	-16

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO:	24324	NO. CONTAINERS	7
PROJ. NAME:	PIT CLOSURE / Ichaco Plant	CUSTODY SEALS	(Y) N / N
P.O. NO:	38822	RECEIVED INTACT	✓
SHIPPED VIA:	FEDERAL EXPRESS	RECEIVED COLD	40°F
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS			
(RUSH) <input type="checkbox"/> 24hr <input type="checkbox"/> 48hr <input type="checkbox"/> 72hr <input type="checkbox"/> 1 WEEK		(NORMAL) <input checked="" type="checkbox"/> 2 WEEK	
Comments:			
CHARGE CODE: 50% 108-51570-24 (XX) 1-0012-31-2010 50% 108-52452-24 (XX) 1-0012-31-2010			
QA/QC ON PROJECT SAMPLES			

Petroleum Hydrocarbons (418.1)	
(MOD 8015) Gas/Diesel	
Diesel/Gasoline/BTEX/MTBE (MOD 8015/8020)	
BTEX/MTBE (8020)	
BTEX (8020)	
Chlorinated Hydrocarbons (601/8010)	
Aromatic Hydrocarbons (602/8020)	
SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	
Pesticides/PCB (608/8080)	
Herbicides (615/8150)	
Base/Neutral/Acid Compounds GC/MS (625/8270)	
Volatile Organics GC/MS (624/8240)	
Polynuclear Aromatics (610/8310)	
SDWA Primary Standards - Arizona	
SDWA Secondary Standards - Arizona	
SDWA Primary Standards - Federal	
SDWA Secondary Standards - Federal	
The 13 Priority Pollutant Metals	
RCRA Metals by Total Digestion	X
RCRA Metals by TCLP (1311)	X

SAMPLED & RELINQUISHED BY: 1.			RELINQUISHED BY: 2.			3.		
Signature:	Time:		Signature:	Time:		Signature:	Time:	
Printed Name:	Date:		Printed Name:	Date:		Printed Name:	Date:	
Company:	Phone:		Company:			Company:		
RECEIVED BY: 1.			RECEIVED BY: 2.			RECEIVED BY: (LAB) 3.		
Signature:	Time:		Signature:	Time:		Signature:	Time:	
Printed Name:	Date:		Printed Name:	Date:		Printed Name:	Date:	
Company:			Company:			Company:		

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

DISTRIBUTION: White, Canary, ATI • Pink • ORIGINATOR



**FIELD SERVICES LABORATORY  
ANALYTICAL REPORT**

**SAMPLE IDENTIFICATION**

**SAMPLE NUMBER:** 951046  
**MATRIX:** Soil  
**SAMPLE DATE:** 11-Oct-95  
**SAMPLE TIME (Hrs.):** 810  
**SAMPLED BY:** Cory Chance, Philips  
**PROJECT:** Chaco Plant Pond Closure  
**FACILITY ID:** 5212  
**SAMPLE LOCATION:** Chaco Plant Bore Hole #4  
**SAMPLE POINT:** 13 - 15 Foot  
**DATE OF ANALYSIS:** 12-Oct-95

**REMARKS:** None.

**EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS**

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	81		
SURROGATE % RECOVERY	98	Allowed Range 80 to 120 %	

**NOTES:**

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

18-Oct-95

Date



**FIELD SERVICES LABORATORY  
ANALYTICAL REPORT**

**SAMPLE IDENTIFICATION**

**SAMPLE NUMBER:** 951047  
**MATRIX:** Soil  
**SAMPLE DATE:** 11-Oct-95  
**SAMPLE TIME (Hrs.):** 904  
**SAMPLED BY:** Cory Chance, Philips  
**PROJECT:** Chaco Plant Pond Closure  
**FACILITY ID:** 5212  
**SAMPLE LOCATION:** Chaco Plant Bore Hole #4  
**SAMPLE POINT:** 20 - 22 Foot  
**DATE OF ANALYSIS:** 12-Oct-95

**REMARKS:** None.

**EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS**

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	80		
SURROGATE % RECOVERY	98	Allowed Range 80 to 120 %	

**NOTES:**

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

*John Sardin*

18-Oct-95

Date



**FIELD SERVICES LABORATORY  
ANALYTICAL REPORT**

**SAMPLE IDENTIFICATION**

**SAMPLE NUMBER:** 951048  
**MATRIX:** Soil  
**SAMPLE DATE:** 11-Oct-95  
**SAMPLE TIME (Hrs.):** 1016  
**SAMPLED BY:** Cory Chance, Philips  
**PROJECT:** Chaco Plant Pond Closure  
**FACILITY ID:** 5212  
**SAMPLE LOCATION:** Chaco Plant Bore Hole #1  
**SAMPLE POINT:** 5 - 7 Foot  
**DATE OF ANALYSIS:** 12-Oct-95

**REMARKS:** None.

**EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS**

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	1.5	None	None
TOTAL BTEX	1.50	None	50
TPH by EPA 418.1	2,068	None	100
PERCENT SOLIDS	85		
SURROGATE % RECOVERY	98	Allowed Range 80 to 120 %	

**NOTES:**

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

A handwritten signature in black ink, appearing to read 'John L. Linder', written over a horizontal line.

18-Oct-95

Date





FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951049  
MATRIX: Soil  
SAMPLE DATE: 11-Oct-95  
SAMPLE TIME (Hrs.): 1113  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #1  
SAMPLE POINT: 30 - 32 Foot  
DATE OF ANALYSIS: 12-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	90		
SURROGATE % RECOVERY	97	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

18-Oct-95  
Date



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951050  
MATRIX: Soil  
SAMPLE DATE: 11-Oct-95  
SAMPLE TIME (Hrs.): 1307  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #2  
SAMPLE POINT: 10 - 12 Foot  
DATE OF ANALYSIS: 12-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	82		
SURROGATE % RECOVERY	98	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

18-Oct-95

Date



**FIELD SERVICES LABORATORY  
ANALYTICAL REPORT**

**SAMPLE IDENTIFICATION**

**SAMPLE NUMBER:** 951051  
**MATRIX:** Soil  
**SAMPLE DATE:** 11-Oct-95  
**SAMPLE TIME (Hrs.):** 1353  
**SAMPLED BY:** Cory Chance, Philips  
**PROJECT:** Chaco Plant Pond Closure  
**FACILITY ID:** 5212  
**SAMPLE LOCATION:** Chaco Plant Bore Hole #2  
**SAMPLE POINT:** 30 - 32 Foot  
**DATE OF ANALYSIS:** 12-Oct-95

**REMARKS:** None.

**EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS**

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	84		
SURROGATE % RECOVERY	98	Allowed Range 80 to 120 %	

**NOTES:**

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

*John L. Linder*

18-Oct-95

Date

# EL PASO NATURAL GAS - FIELD SERVICES LAB

## QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 951046 thru 951051

QA/QC for 10/12/95 Sample Set

### LABORATORY CALIBRATION CHECKS, LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
ICV LA-45473 50 PPB					RANGE	
Benzene	Standard	50.0	44.0	88.0	75 - 125 %	X
Toluene	Standard	50.0	45.8	91.6	75 - 125 %	X
Ethyl benzene	Standard	50.0	47.0	94.0	75 - 125 %	X
m & p - Xylene	Standard	100	92.4	92.4	75 - 125 %	X
o - Xylene	Standard	50.0	46.9	93.8	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
LCS LA-45476 25 PPB					YES	NO
					RANGE	
Benzene	Standard	25.0	29.0	116.0	39 - 150	X
Toluene	Standard	25.0	28.8	115.2	46 - 148	X
Ethyl benzene	Standard	25.0	27.2	108.8	32 - 160	X
m & p - Xylene	Standard	50.0	55.3	110.6	Not Given	X
o - Xylene	Standard	25.0	27.6	110.4	Not Given	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
CCV1 LA-45473 50 PPB					YES	NO
					RANGE	
Benzene	Standard	50.0	41.3	82.6	75 - 125 %	X
Toluene	Standard	50.0	44.5	89.0	75 - 125 %	X
Ethyl benzene	Standard	50.0	45.2	90.4	75 - 125 %	X
m & p - Xylene	Standard	100	88.6	88.6	75 - 125 %	X
o - Xylene	Standard	50.0	45.1	90.2	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
CCV2 LA-45473 50 PPB					YES	NO
					RANGE	
Benzene	Standard	50.0	41.8	83.6	75 - 125 %	X
Toluene	Standard	50.0	43.7	87.4	75 - 125 %	X
Ethyl benzene	Standard	50.0	44.3	88.6	75 - 125 %	X
m & p - Xylene	Standard	100	86.3	86.3	75 - 125 %	X
o - Xylene	Standard	50.0	44.2	88.4	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
CCV3 LA-45473 50 PPB					YES	NO
					RANGE	
Benzene	Standard	50.0		0.0	75 - 125 %	NA
Toluene	Standard	50.0		0.0	75 - 125 %	NA
Ethyl benzene	Standard	50.0		0.0	75 - 125 %	NA
m & p - Xylene	Standard	100		0.0	75 - 125 %	NA
o - Xylene	Standard	50.0		0.0	75 - 125 %	NA

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT PPM ug/L	DUPLICATE RESULT PPM ug/L	RPD	ACCEPTABLE	
					YES	NO
951046					RANGE	
Benzene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X
Toluene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	^
Ethyl benzene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X
m & p - Xylene	Extraction Dup	<5.0	<5.0	0	+/- 35 %	X
o - Xylene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT PPM ug/L	DUPLICATE RESULT PPM ug/L	RPD	ACCEPTABLE	
					YES	NO
NA					RANGE	
Benzene	Extraction Dup			0	+/- 35 %	NA
Toluene	Extraction Dup			0	+/- 35 %	NA
Ethyl benzene	Extraction Dup			0	+/- 35 %	NA
m & p - Xylene	Extraction Dup			0	+/- 35 %	NA
o - Xylene	Extraction Dup			0	+/- 35 %	NA

Narrative:

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT PPM ug/L	DUPLICATE RESULT PPM ug/L	RPD	ACCEPTABLE	
					YES	NO
951046					RANGE	
Benzene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X
Toluene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X
Ethyl benzene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X
m & p - Xylene	Matrix Duplicate	<5.0	<5.0	0	+/- 35 %	X
o - Xylene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT PPM ug/L	DUPLICATE RESULT PPM ug/L	RPD	ACCEPTABLE	
					YES	NO
NA					RANGE	
Benzene	Matrix Duplicate			0	+/- 35 %	NA
Toluene	Matrix Duplicate			0	+/- 35 %	NA
Ethyl benzene	Matrix Duplicate			0	+/- 35 %	NA
m & p - Xylene	Matrix Duplicate			0	+/- 35 %	NA
o - Xylene	Matrix Duplicate			0	+/- 35 %	NA

Narrative:

## LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
951046	50.00				RANGE	
Benzene	50.0	<2.5	42.4	84.8	75 - 125 %	X
Toluene	50.0	<2.5	44.7	89.4	75 - 125 %	X
Ethyl benzene	50.0	<2.5	45.5	91.0	75 - 125 %	X
m & p - Xylene	100.0	<5.0	89.1	89.1	75 - 125 %	X
o - Xylene	50.0	<2.5	45.2	90.4	75 - 125 %	X

Narrative: Acceptable.

## LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	ZR	ACCEPTABLE	
					YES	NO
					RANGE	
NA	50.00					
Benzene	50.0			0	75 - 125 %	NA
Toluene	50.0			0	75 - 125 %	NA
Ethyl benzene	50.0			0	75 - 125 %	NA
m & p - Xylene	100.0			0	75 - 125 %	NA
o - Xylene	50.0			0	75 - 125 %	NA

Narrative:

## ADDITIONAL ANALYTICAL BLANKS:

SAMPLE ID	SOURCE	PPB	STATUS
AUTO BLANK/BOILED WATER			
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
SOIL VIAL BLANK	Lot # ME 2551		
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
EXTRACTION BLANK	Lot # H18318		
Benzene	Methanol	<2.5	ACCEPTABLE
Toluene	Methanol	<2.5	ACCEPTABLE
Ethyl benzene	Methanol	<2.5	ACCEPTABLE
Total Xylenes	Methanol	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	NARRATIVE	STATUS
Carryover contamination checks		(Not performed with this set)	
Benzene	Vial + Boiled Water	<2.5	NA
Toluene	Vial + Boiled Water	<2.5	NA
Ethyl benzene	Vial + Boiled Water	<2.5	NA
Total Xylenes	Vial + Boiled Water	<7.5	NA

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
METHANOL CHECK	Lot # H18318	(Not performed with this set)	
Benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Toluene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	MeOH/Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

Approved By:



Date: 18-Oct-95

# QUALITY CONTROL REPORT

Test by Modified 418.1 by Infrared

Date of Analysis: October 12, 1995

6 Chaco Plant Samples

## LABORATORY CONTROL SAMPLES: CALIBRATION CHECKS

SAMPLE ID	SOURCE	TRUE VALUE (PPM)	FOUND (MG/KG)	%R	ACCEPTABLE RANGE 75-125 %R YES NO
INITIAL CALIBRATION VERIF.	HORIBA	100	102	102	X
"B" Heavy Oil (Lot M3G9616)		300	303	101	X

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT (S)MG/KG	DUPLICATE RESULT (D)MG/KG	RPD	ACCEPTABLE RANGE + / - 35% YES NO
951048	2nd Extract	2070	2310	10.96	X

Narrative : Acceptable.

## LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED (SA)MG/KG	SAMPLE RESULT (S)MG/KG	SPIKE SAMPLE RESULT (SR)MG/KG	%R	ACCEPTABLE RANGE 75-125 %R YES NO
951048	1420	2070	3610	108	X

Narrative: Acceptable.

## REFERENCE SOIL (Laboratory Control Sample):

SAMPLE ID	SOURCE	KNOWN VALUE (MG/KG)	SAMPLE RESULT FOUND (MG/KG)	MFG SPECIFIED RANGE	ACCEPTABLE YES NO
ERA TPH STANDARD #1 LOT # 91030	ENVIRONMENTAL RESOURCE ASS.	2920	2490	1900 - 3360	X
ERA TPH STANDARD #2 w/int LOT # 91030	ENVIRONMENTAL RESOURCE ASS.	1150	1210	750 - 1320	X

Narrative: Acceptable.

## LABORATORY REAGENT BLANK:

SAMPLE ID	SOURCE	TPH LEVEL (MG/KG)	STATUS
Freon Solvent	EPNG Lab	< 10.0	ACCEPTABLE
Reagent Blank	EPNG Lab	< 10.0	ACCEPTABLE

Narrative: Acceptable.

Approved By:

*John F. Farnham*

Date: 16-Oct-95

Extracted: 10/12/94

# EL PASO NATURAL GAS - FIELD SERVICES LAB

QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 951046 thru 951051

QA/QC for 10/12/95 Sample Set

## LABORATORY CALIBRATION CHECKS, LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
ICV LA-45473 50 PPB					RANGE	
Benzene	Standard	50.0	44.0	88.0	75 - 125 %	X
Toluene	Standard	50.0	45.8	91.6	75 - 125 %	X
Ethyl benzene	Standard	50.0	47.0	94.0	75 - 125 %	X
m & p - Xylene	Standard	100	92.4	92.4	75 - 125 %	X
o - Xylene	Standard	50.0	46.9	93.8	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
LCS LA-45476 25 PPB					YES	NO
					RANGE	
Benzene	Standard	25.0	29.0	116.0	39 - 150	X
Toluene	Standard	25.0	28.8	115.2	46 - 148	X
Ethyl benzene	Standard	25.0	27.2	108.8	32 - 160	X
m & p - Xylene	Standard	50.0	55.3	110.6	Not Given	X
o - Xylene	Standard	25.0	27.6	110.4	Not Given	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
CCV1 LA-45473 50 PPB					YES	NO
					RANGE	
Benzene	Standard	50.0	41.3	82.6	75 - 125 %	X
Toluene	Standard	50.0	44.5	89.0	75 - 125 %	X
Ethyl benzene	Standard	50.0	45.2	90.4	75 - 125 %	X
m & p - Xylene	Standard	100	88.6	88.6	75 - 125 %	X
o - Xylene	Standard	50.0	45.1	90.2	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
CCV2 LA-45473 50 PPB					YES	NO
					RANGE	
Benzene	Standard	50.0	41.8	83.6	75 - 125 %	X
Toluene	Standard	50.0	43.7	87.4	75 - 125 %	X
Ethyl benzene	Standard	50.0	44.3	88.6	75 - 125 %	X
m & p - Xylene	Standard	100	86.3	86.3	75 - 125 %	X
o - Xylene	Standard	50.0	44.2	88.4	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
CCV3 LA-45473 50 PPB					YES	NO
					RANGE	
Benzene	Standard	50.0		0.0	75 - 125 %	NA
Toluene	Standard	50.0		0.0	75 - 125 %	NA
Ethyl benzene	Standard	50.0		0.0	75 - 125 %	NA
m & p - Xylene	Standard	100		0.0	75 - 125 %	NA
o - Xylene	Standard	50.0		0.0	75 - 125 %	NA

Narrative: Acceptable.



## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT	DUPLICATE RESULT	RPD	ACCEPTABLE	
		PPM	PPM		YES	NO
951046		ug/L	ug/L		RANGE	
Benzene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X
Toluene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X
Ethyl benzene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X
m & p - Xylene	Extraction Dup	<5.0	<5.0	0	+/- 35 %	X
o - Xylene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT	DUPLICATE RESULT	RPD	ACCEPTABLE	
		PPM	PPM		YES	NO
NA		ug/L	ug/L		RANGE	
Benzene	Extraction Dup			0	+/- 35 %	NA
Toluene	Extraction Dup			0	+/- 35 %	NA
Ethyl benzene	Extraction Dup			0	+/- 35 %	NA
m & p - Xylene	Extraction Dup			0	+/- 35 %	NA
o - Xylene	Extraction Dup			0	+/- 35 %	NA

Narrative:

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT	DUPLICATE RESULT	RPD	ACCEPTABLE	
		PPM	PPM		YES	NO
951046		ug/L	ug/L		RANGE	
Benzene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X
Toluene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X
Ethyl benzene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X
m & p - Xylene	Matrix Duplicate	<5.0	<5.0	0	+/- 35 %	X
o - Xylene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT	DUPLICATE RESULT	RPD	ACCEPTABLE	
		PPM	PPM		YES	NO
NA		ug/L	ug/L		RANGE	
Benzene	Matrix Duplicate			0	+/- 35 %	NA
Toluene	Matrix Duplicate			0	+/- 35 %	NA
Ethyl benzene	Matrix Duplicate			0	+/- 35 %	NA
m & p - Xylene	Matrix Duplicate			0	+/- 35 %	NA
o - Xylene	Matrix Duplicate			0	+/- 35 %	NA

Narrative:

## LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED	SAMPLE RESULT	SPIKE SAMPLE RESULT	%R	ACCEPTABLE	
		PPB	PPB		YES	NO
951046	50.00				RANGE	
Benzene	50.0	<2.5	42.4	84.8	75 - 125 %	X
Toluene	50.0	<2.5	44.7	89.4	75 - 125 %	X
Ethyl benzene	50.0	<2.5	45.5	91.0	75 - 125 %	X
m & p - Xylene	100.0	<5.0	89.1	89.1	75 - 125 %	X
o - Xylene	50.0	<2.5	45.2	90.4	75 - 125 %	X

1012-00C.XLS

Narrative: Acceptable.

## LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE YES NO
NA	50.00				RANGE
Benzene	50.0			0	75 - 125 % NA
Toluene	50.0			0	75 - 125 % NA
Ethyl benzene	50.0			0	75 - 125 % NA
m & p - Xylene	100.0			0	75 - 125 % NA
o - Xylene	50.0			0	75 - 125 % NA

Narrative:

## ADDITIONAL ANALYTICAL BLANKS:

SAMPLE ID	SOURCE	PPB	STATUS
AUTO BLANK/BOILED WATER			
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
SOIL VIAL BLANK	Lot # ME 2551		
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
EXTRACTION BLANK	Lot # H18318		
Benzene	Methanol	<2.5	ACCEPTABLE
Toluene	Methanol	<2.5	ACCEPTABLE
Ethyl benzene	Methanol	<2.5	ACCEPTABLE
Total Xylenes	Methanol	<7.5	ACCEPTABLE

Narrative: Acceptable.

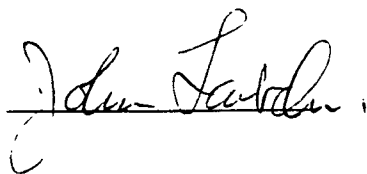
SAMPLE ID	SOURCE	NARRATIVE	STATUS
Carryover contamination checks		(Not performed with this set)	
Benzene	Vial + Boiled Water	<2.5	NA
Toluene	Vial + Boiled Water	<2.5	NA
Ethyl benzene	Vial + Boiled Water	<2.5	NA
Total Xylenes	Vial + Boiled Water	<7.5	NA

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
METHANOL CHECK	Lot # H18318	(Not performed with this set)	
Benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Toluene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	MeOH/Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

Approved By:



Date: 13-Oct-95

**QUALITY CONTROL REPORT**  
TPH by Modified 418.1 by Infrared

**Date of Analysis: October 12, 1995**

**6 Chaco Plant Samples**

**LABORATORY CONTROL SAMPLES: CALIBRATION CHECKS**

SAMPLE ID	SOURCE	TRUE VALUE (PPM)	FOUND (MG/KG)	%R	ACCEPTABLE RANGE 75-125 %R	
					YES	NO
INITIAL CALIBRATION VERIF. "B" Heavy Oil (Lot M3G9616)	HORIBA	100	102	102	X	
		300	303	101	X	

Narrative: Acceptable.

**LABORATORY DUPLICATES:**

SAMPLE NUMBER	TYPE	SAMPLE RESULT (S)MG/KG	DUPLICATE RESULT (D)MG/KG	RPD	ACCEPTABLE RANGE + / - 35%	
					YES	NO
951048	2nd Extract	2070	2310	10.96	X	

Narrative : Acceptable.

**LABORATORY SPIKES:**

SAMPLE NUMBER	SPIKE ADDED (SA)MG/KG	SAMPLE RESULT (S)MG/KG	SPIKE SAMPLE RESULT (SR)MG/KG	%R	ACCEPTABLE RANGE 75-125 %R	
					YES	NO
951048	1420	2070	3610	108	X	

Narrative: Acceptable.

**REFERENCE SOIL (Laboratory Control Sample):**

SAMPLE ID	SOURCE	KNOWN VALUE (MG/KG)	SAMPLE RESULT FOUND (MG/KG)	MFG SPECIFIED RANGE	ACCEPTABLE	
					YES	NO
ERA TPH STANDARD #1 LOT # 91030	ENVIRONMENTAL RESOURCE ASS.	2920	2490	1900 - 3360	X	
ERA TPH STANDARD #2 w/int LOT # 91030	ENVIRONMENTAL RESOURCE ASS.	1150	1210	750 - 1320	X	

Narrative: Acceptable.

**LABORATORY REAGENT BLANK:**

SAMPLE ID	SOURCE	TPH LEVEL (MG/KG)	STATUS
Freon Solvent	EPNG Lab	< 10.0	ACCEPTABLE
Reagent Blank	EPNG Lab	< 10.0	ACCEPTABLE

Narrative: Acceptable.

Approved By: *John Larkin*

Date: 16-Oct-95

Extracted: 10/12/94



Analytical **Technologies, Inc.**

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

ATI I.D. 510369

November 1, 1995

951058 to 951067

El Paso Natural Gas  
P.O. Box 4990  
Farmington, NM 87499

Project Name/Number: PIT CLOSURE/CHACO PLANT 24324

Attention: John Lambdin

On 10/18/95, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

All analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

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

Kimberly D. McNeill  
Project Manager

H. Mitchell Rubenstein, Ph.D.  
Laboratory Manager

MR:jt

Enclosure





Analytical**Technologies**,Inc.

CLIENT : EL PASO NATURAL GAS DATE RECEIVED : 10/18/95  
PROJECT # : 24324  
PROJECT NAME : PIT CLOSURE/CHACO PLANT REPORT DATE : 11/01/95

ATI ID: 510369

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
<del>01</del>	<del>951046</del>	<del>NON-AQ</del>	<del>10/11/95</del>
<del>02</del>	<del>951047</del>	<del>NON-AQ</del>	<del>10/11/95</del>
<del>03</del>	<del>951048</del>	<del>NON-AQ</del>	<del>10/11/95</del>
<del>04</del>	<del>951049</del>	<del>NON-AQ</del>	<del>10/11/95</del>
<del>05</del>	<del>951050</del>	<del>NON-AQ</del>	<del>10/11/95</del>
<del>06</del>	<del>951051</del>	<del>NON-AQ</del>	<del>10/11/95</del>
07	951058	NON-AQ	10/12/95
08	951059	NON-AQ	10/12/95
09	951060	NON-AQ	10/12/95
10	951061	NON-AQ	10/12/95
11	951062	NON-AQ	10/12/95
12	951063	NON-AQ	10/12/95
13	951064	NON-AQ	10/12/95
14	951065	NON-AQ	10/12/95
15	951066	NON-AQ	10/13/95
16	951067	NON-AQ	10/13/95



---TOTALS---

MATRIX                      #SAMPLES  
NON-AQ                      16

ATI STANDARD DISPOSAL PRACTICE

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



Analytical Technologies, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951058

BH #3

S-7 Feet

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/12/95

Lab Sample ID: 95-10-162-07

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	1	1
Barium	6010	80	10
Cadmium	6010	ND	0.5
Chromium	6010	3	1
Lead	6010	4.3	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected

1" 20 Limits + As - 100 mg/kg  
Ba - 1000  
Ca - 20  
Cr - 100  
Pb - 100  
Hg - 4  
Se - 20  
Ag - 100



Analytical**Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Lab Sample ID: 95-10-162-08

Sample Matrix: Soil

Sample ID

951059

BA#3

30-32 ft

Date Collected: 10/12/95

Prep Date: 10/20, 24/95

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	6	1
Barium	6010	10	10
Cadmium	6010	ND	0.5
Chromium	6010	4	1
Lead	6010	5.2	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical Technologies, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951060

BH# 5  
10-12 Foot

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/12/95

Lab Sample ID: 95-10-162-09

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	ND	1
Barium	6010	30	10
Cadmium	6010	ND	0.5
Chromium	6010	23	1
Lead	6010	3.3	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected





Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951061

BH #5

30-32 FOOT

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/12/95

Lab Sample ID: 95-10-162-10

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	3	1
Barium	6010	20	10
Cadmium	6010	ND	0.5
Chromium	6010	11	1
Lead	6010	14	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951062

BH #7

10-12 Foot

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/12/95

Lab Sample ID: 95-10-162-11

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	ND	1
Barium	6010	40	10
Cadmium	6010	ND	0.5
Chromium	6010	8	1
Lead	6010	3.1	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

**951063**

BA #7

30-32 foot

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/12/95

Lab Sample ID: 95-10-162-12

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	8	1
Barium	6010	40	10
Cadmium	6010	ND	0.5
Chromium	6010	7	1
Lead	6010	9.3	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Lab Sample ID: 95-10-162-13

Sample Matrix: Soil

Sample ID

**951064**

BT # 6

10-12 FOOT

Date Collected: 10/12/95

Prep Date: 10/20, 24/95

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	1	1
Barium	6010	50	10
Cadmium	6010	ND	0.5
Chromium	6010	6	1
Lead	6010	3.4	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951065

BH # 6

30--32 Foot

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/12/95

Lab Sample ID: 95-10-162-14

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	6	1
Barium	6010	20	10
Cadmium	6010	ND	0.5
Chromium	6010	8	1
Lead	6010	6.1	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951066

BH#8A

40-42 Feet

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/13/95

Lab Sample ID: 95-10-162-15

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	4	1
Barium	6010	ND	10
Cadmium	6010	ND	0.5
Chromium	6010	2	1
Lead	6010	3.1	0.3
Mercury	7471	ND	0.2
Seelenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



Analytical **Technologies**, Inc.

## TOTAL METALS

Lab Name: Analytical Technologies, Inc.

Sample ID

951067

BH#8B

15-17 Pot

Client Name: ATI-NM

Client Project ID: Pit Closure/Chaco Plt. -- 510369

Date Collected: 10/13/95

Lab Sample ID: 95-10-162-16

Prep Date: 10/20, 24/95

Sample Matrix: Soil

Date Analyzed: 10/23, 25/95

Analyte	Modified Method	Concentration mg/kg	Detection Limit mg/kg
Arsenic	6010	3	1
Barium	6010	20	10
Cadmium	6010	ND	0.5
Chromium	6010	1	1
Lead	6010	2.9	0.3
Mercury	7471	ND	0.2
Selenium	6010	ND	0.5
Silver	6010	ND	1

ND = Not Detected



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951058  
MATRIX: Soil  
SAMPLE DATE: 12-Oct-95  
SAMPLE TIME (Hrs.): 740  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #3  
SAMPLE POINT: 5 - 7 Foot  
DATE OF ANALYSIS: 18-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	4,300	None	100
PERCENT SOLIDS	89		
SURROGATE % RECOVERY	103	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: *Cory Chance*

20-Oct-95  
Date





FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951059  
MATRIX: Soil  
SAMPLE DATE: 12-Oct-95  
SAMPLE TIME (Hrs.): 828  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #3  
SAMPLE POINT: 30 - 32 Foot  
DATE OF ANALYSIS: 18-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	86		
SURROGATE % RECOVERY	100	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: *Cory Chance*

20-Oct-95  
Date



**FIELD SERVICES LABORATORY  
ANALYTICAL REPORT**

**SAMPLE IDENTIFICATION**

**SAMPLE NUMBER:** 951060  
**MATRIX:** Soil  
**SAMPLE DATE:** 12-Oct-95  
**SAMPLE TIME (Hrs.):** 945  
**SAMPLED BY:** Cory Chance, Philips  
**PROJECT:** Chaco Plant Pond Closure  
**FACILITY ID:** 5212  
**SAMPLE LOCATION:** Chaco Plant Bore Hole #5  
**SAMPLE POINT:** 10 - 12 Foot  
**DATE OF ANALYSIS:** 18-Oct-95

**REMARKS:** None.

**EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS**

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	2.40	None	10
TOLUENE	1.0	None	None
ETHYL BENZENE	0.70	None	None
TOTAL XYLENES	4.5	None	None
TOTAL BTEX	8.60	None	50
TPH by EPA 418.1	38,400	None	100
PERCENT SOLIDS	88		
SURROGATE % RECOVERY	97	Allowed Range 80 to 120 %	

**NOTES:**

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: [Signature]

20-Oct-95  
Date



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951061  
MATRIX: Soil  
SAMPLE DATE: 16-Oct-95  
SAMPLE TIME (Hrs.): 1017  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #5  
SAMPLE POINT: 30 - 32 Foot  
DATE OF ANALYSIS: 18-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	89		
SURROGATE % RECOVERY	101	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: 

20-Oct-95  
Date



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951062  
MATRIX: Soil  
SAMPLE DATE: 16-Oct-95  
SAMPLE TIME (Hrs.): 1133  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #7  
SAMPLE POINT: 10 - 12 Foot  
DATE OF ANALYSIS: 18-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	17,500	None	100
PERCENT SOLIDS	89		
SURROGATE % RECOVERY	97	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: *Cory Chance*

20-Oct-95  
Date



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951063  
MATRIX: Soil  
SAMPLE DATE: 16-Oct-95  
SAMPLE TIME (Hrs.): 1219  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #7  
SAMPLE POINT: 30 - 32 Foot  
DATE OF ANALYSIS: 18-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	88		
SURROGATE % RECOVERY	99	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

20-Oct-95  
Date



**FIELD SERVICES LABORATORY  
ANALYTICAL REPORT**

**SAMPLE IDENTIFICATION**

**SAMPLE NUMBER:** 951064  
**MATRIX:** Soil  
**SAMPLE DATE:** 16-Oct-95  
**SAMPLE TIME (Hrs.):** 1347  
**SAMPLED BY:** Cory Chance, Philips  
**PROJECT:** Chaco Plant Pond Closure  
**FACILITY ID:** 5212  
**SAMPLE LOCATION:** Chaco Plant Bore Hole #6  
**SAMPLE POINT:** 10 - 12 Foot  
**DATE OF ANALYSIS:** 18-Oct-95

**REMARKS:** None.

**EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS**

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	28,100	None	100
PERCENT SOLIDS	89		
SURROGATE % RECOVERY	96	Allowed Range 80 to 120 %	

**NOTES:**

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

A handwritten signature in black ink, appearing to read 'John F. Linder', written over a horizontal line.

20-Oct-95

Date



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951065  
MATRIX: Soil  
SAMPLE DATE: 16-Oct-95  
SAMPLE TIME (Hrs.): 1423  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #6  
SAMPLE POINT: 30 - 32 Foot  
DATE OF ANALYSIS: 18-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	16	None	100
PERCENT SOLIDS	90		
SURROGATE % RECOVERY	97	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

20-Oct-95

Date



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951066  
MATRIX: Soil  
SAMPLE DATE: 16-Oct-95  
SAMPLE TIME (Hrs.): 1048  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #8A  
SAMPLE POINT: 40 - 42 Foot  
DATE OF ANALYSIS: 18-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	91		
SURROGATE % RECOVERY	97	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: *[Signature]*

20-Oct-95  
Date





FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951067  
MATRIX: Soil  
SAMPLE DATE: 16-Oct-95  
SAMPLE TIME (Hrs.): 1349  
SAMPLED BY: Cory Chance, Philips  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant Bore Hole #8B  
SAMPLE POINT: 15 - 17 Foot  
DATE OF ANALYSIS: 18-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.5	None	10
TOLUENE	<0.5	None	None
ETHYL BENZENE	<0.5	None	None
TOTAL XYLENES	<1.5	None	None
TOTAL BTEX	<3.0	None	50
TPH by EPA 418.1	<10	None	100
PERCENT SOLIDS	83		
SURROGATE % RECOVERY	97	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control.

The limits shown are based on New Mexico Regulations.

Approved By: \_\_\_\_\_

20-Oct-95

Date

Date of Analysis: October 16, 1995

10 Chaco Plant Samples

LABORATORY CONTROL SAMPLES: CALIBRATION CHECKS

SAMPLE ID	SOURCE	TRUE VALUE (PPM)	FOUND (MG/KG)	%R	ACCEPTABLE RANGE 75-125 %R YES NO
INITIAL CALIBRATION VERIF. "B" Heavy Oil (Lot M3G9616)	HORIBA	300	297	99	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT (S)MG/KG	DUPLICATE RESULT (D)MG/KG	RPD	ACCEPTABLE RANGE + / - 35% YES NO
951067	2nd Extract	< 10	< 10	0.00	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED (SA)MG/KG	SAMPLE RESULT (S)MG/KG	SPIKE SAMPLE RESULT (SR)MG/KG	%R	ACCEPTABLE RANGE 75-125 %R YES NO
951067	2940	< 10	3590	122	X

Narrative: Acceptable.

REFERENCE SOIL (Laboratory Control Sample):

SAMPLE ID	SOURCE	KNOWN VALUE (MG/KG)	SAMPLE RESULT FOUND (MG/KG)	MFG SPECIFIED RANGE	ACCEPTABLE YES NO
ERA TPH STANDARD #1 LOT # 91030	ENVIRONMENTAL RESOURCE ASS.	2920	3090	1900 - 3360	X
ERA TPH STANDARD #2 w/int LOT # 91030	ENVIRONMENTAL RESOURCE ASS.	1150	1150	750 - 1320	X

Narrative: Acceptable.

LABORATORY REAGENT BLANK:

SAMPLE ID	SOURCE	TPH LEVEL (MG/KG)	STATUS
Freon Solvent	EPNG Lab	< 10.0	ACCEPTABLE
Reagent Blank	EPNG Lab	< 10.0	ACCEPTABLE

Narrative: Acceptable.

Approved By:

*John F. Smith*

Date: 18-Oct-95

Extracted: 10/16/95

# EL PASO NATURAL GAS - FIELD SERVICES LAB

## QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 951058 thru 951067

QA/QC for 10/18/95 Sample Set

### LABORATORY CALIBRATION CHECKS, LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER ICV LA-45473 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	49.7	99.4	75 - 125 %	X
Toluene	Standard	50.0	48.2	96.4	75 - 125 %	X
Ethyl benzene	Standard	50.0	49.0	98.0	75 - 125 %	X
m & p - Xylene	Standard	100	98.2	98.2	75 - 125 %	X
o - Xylene	Standard	50.0	49.0	98.0	75 - 125 %	X
SAMPLE NUMBER LCS LA-45476 25 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	25.0	24.9	99.6	39 - 150	X
Toluene	Standard	25.0	24.7	98.8	46 - 148	X
Ethyl benzene	Standard	25.0	24.1	96.4	32 - 160	X
m & p - Xylene	Standard	50.0	49.4	98.8	Not Given	X
o - Xylene	Standard	25.0	24.2	96.8	Not Given	X
SAMPLE NUMBER CCV1 LA-45473 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	48.4	96.8	75 - 125 %	X
Toluene	Standard	50.0	47.7	95.4	75 - 125 %	X
Ethyl benzene	Standard	50.0	48.2	96.4	75 - 125 %	X
m & p - Xylene	Standard	100	95.0	95.0	75 - 125 %	X
o - Xylene	Standard	50.0	48.1	96.2	75 - 125 %	X
SAMPLE NUMBER CCV2 LA-45473 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	46.7	93.4	75 - 125 %	X
Toluene	Standard	50.0	44.6	89.2	75 - 125 %	X
Ethyl benzene	Standard	50.0	45.4	90.8	75 - 125 %	X
m & p - Xylene	Standard	100	90.3	90.3	75 - 125 %	X
o - Xylene	Standard	50.0	45.5	91.0	75 - 125 %	X
SAMPLE NUMBER CCV3 LA-45473 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	44.0	88.0	75 - 125 %	X
Toluene	Standard	50.0	43.4	86.8	75 - 125 %	X
Ethyl benzene	Standard	50.0	44.0	88.0	75 - 125 %	X
m & p - Xylene	Standard	100	87.2	87.2	75 - 125 %	X
o - Xylene	Standard	50.0	44.1	88.2	75 - 125 %	X

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT PPM ug/L	DUPLICATE RESULT PPM ug/L	RPD	ACCEPTABLE	
					YES	NO
951060					RANGE	
Benzene	Extraction Dup	12.10	13.40	10	+/- 35 %	X
Toluene	Extraction Dup	5.16	6.01	15	+/- 35 %	X
Ethyl benzene	Extraction Dup	3.58	4.17	15	+/- 35 %	X
m & p - Xylene	Extraction Dup	18.20	20.40	11	+/- 35 %	X
o - Xylene	Extraction Dup	5.0	5.8	14	+/- 35 %	X

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT PPM ug/L	DUPLICATE RESULT PPM ug/L	RPD	ACCEPTABLE	
					YES	NO
NA					RANGE	
Benzene	Extraction Dup			0	+/- 35 %	NA
Toluene	Extraction Dup			0	+/- 35 %	NA
Ethyl benzene	Extraction Dup			0	+/- 35 %	NA
m & p - Xylene	Extraction Dup			0	+/- 35 %	NA
o - Xylene	Extraction Dup			0	+/- 35 %	NA

Narrative:

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT PPM ug/L	DUPLICATE RESULT PPM ug/L	RPD	ACCEPTABLE	
					YES	NO
951060					RANGE	
Benzene	Matrix Duplicate	12.10	11.50	5	+/- 35 %	X
Toluene	Matrix Duplicate	5.16	5.24	2	+/- 35 %	X
Ethyl benzene	Matrix Duplicate	3.58	3.52	2	+/- 35 %	X
m & p - Xylene	Matrix Duplicate	18.20	18.20	0	+/- 35 %	X
o - Xylene	Matrix Duplicate	4.99	5.23	5	+/- 35 %	X

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT PPM ug/L	DUPLICATE RESULT PPM ug/L	RPD	ACCEPTABLE	
					YES	NO
NA					RANGE	
Benzene	Matrix Duplicate			0	+/- 35 %	NA
Toluene	Matrix Duplicate			0	+/- 35 %	NA
Ethyl benzene	Matrix Duplicate			0	+/- 35 %	NA
m & p - Xylene	Matrix Duplicate			0	+/- 35 %	NA
o - Xylene	Matrix Duplicate			0	+/- 35 %	NA

Narrative:

## LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
951060	50.00				RANGE	
Benzene	50.0	12.1	57.0	89.8	75 - 125 %	X
Toluene	50.0	5.2	50.5	90.7	75 - 125 %	X
Ethyl benzene	50.0	3.6	50.1	93.0	75 - 125 %	X
m & p - Xylene	100.0	18.2	108.8	90.6	75 - 125 %	X
o - Xylene	50.0	5.0	51.7	93.4	75 - 125 %	X

1018-10C.XLS

Narrative: Acceptable.

## LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	ZR	ACCEPTABLE	
					YES	NO
					RANGE	
NA	50.00					
Benzene	50.0			0	75 - 125 %	NA
Toluene	50.0			0	75 - 125 %	NA
Ethyl benzene	50.0			0	75 - 125 %	NA
m & p - Xylene	100.0			0	75 - 125 %	NA
o - Xylene	50.0			0	75 - 125 %	NA

Narrative:

## ADDITIONAL ANALYTICAL BLANKS:

SAMPLE ID	SOURCE	PPB	STATUS
AUTO BLANK/BOILED WATER			
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
SOIL VIAL BLANK	Lot # ME 2551		
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
EXTRACTION BLANK	Lot # H18318		
Benzene	Methanol	<2.5	ACCEPTABLE
Toluene	Methanol	<2.5	ACCEPTABLE
Ethyl benzene	Methanol	<2.5	ACCEPTABLE
Total Xylenes	Methanol	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	NARRATIVE	STATUS
Carryover contamination checks		(6 blanks were analyzed with this batch)	
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
METHANOL CHECK	Lot # H18318	(Not performed with this set)	
Benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Toluene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	MeOH/Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

Approved By:

*John Sander*

Date: 19-Oct-95

PROJECT NUMBER # 24324		PROJECT NAME Pit Closure Project		DATE 10/12/95		FIELD ID		TOTAL NUMBERS OF CONTAINERS		SAMPLE TYPE		REQUESTED ANALYSIS				CONTRACT LABORATORY P. O. NUMBER	
LAB ID		DATE	TIME	MATRIX								TPH EPA 418.1	BTEX EPA 8020	LAB PID	PID #	SEQUENCE #	REMARKS
951058	10/12/95	0740	501L	CMC 146	1	V6	✓	✓		25	130	5-7'	Chase P/ant	BH#3			
951059	10/12/95	0828		CMC 147	1	V6	✓	✓		0	131	30-32'		BH#3			
951060	10/12/95	0945		CMC 148	1	V6	✓	✓		209	132	10-12'		BH#5			
951061	10/12/95	1017		CMC 149	1	V6	✓	✓		0	133	30-32		BH#5			
951062	10/12/95	1133		CMC 150	1	V6	✓	✓		32	134	10-12		BH#27			
951063	10/12/95	1219		CMC 151	1	V6	✓	✓		0	135	30-32		BH#27			
951064	10/12/95	1347		CMC 152	1	V6	✓	✓		131	136	10-12		BH#6			
951065	10/12/95	1423	✓	CMC 153	1	V6	✓	✓		0	137	30-32		BH#6			
Cmc 10/12/95																	
RELINQUISHED BY: (Signature) Cory Chan		340 DATE/TIME 10/12/95 1630		RECEIVED BY: (Signature) Kelly G. ...		RELINQUISHED BY: (Signature) Kelly G. ...		RECEIVED BY: (Signature) Kelly G. ...		DATE/TIME 10/12/95 15:00		RECEIVED BY: (Signature) Kelly G. ...		DATE/TIME 10/12/95 15:00		RECEIVED BY: (Signature) Kelly G. ...	
REQUESTED TURNAROUND TIME: <input type="checkbox"/> ROUTINE <input type="checkbox"/> RUSH		SAMPLE RECEIPT REMARKS		RESULTS & INVOICES TO:		FIELD SERVICES LABORATORY EL PASO NATURAL GAS COMPANY P.O. BOX 4990 FARMINGTON, NEW MEXICO 87499		505-593-2144		505-599-2261		FAX: 505-599-2261		340F			
CARRIER CO.		BILL NO.:		CHARACTER CODE													

## CHAIN OF CUSTODY RECORD

[illegible]







FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER: 951068  
MATRIX: Water  
SAMPLE DATE: 16-Oct-95  
SAMPLE TIME (Hrs.): 1335  
SAMPLED BY: Dennis Bird  
PROJECT: Chaco Plant Pond Closure  
FACILITY ID: 5212  
SAMPLE LOCATION: Chaco Plant  
SAMPLE POINT: Monitor Well #8  
DATE OF ANALYSIS: 17-Oct-95

REMARKS: None.

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	29.5	None	10
TOLUENE	<2.5	None	740
ETHYL BENZENE	<2.5	None	750
TOTAL XYLENES	<7.5	None	620
SURROGATE % RECOVERY	96	Allowed Range 80 to 120 %	

NOTES:

Acceptable Quality Control. The TRIP BLANK was clean.

Approved By: \_\_\_\_\_

A handwritten signature in black ink, appearing to read 'John Faiden', written over a horizontal line.

15-Nov-95

Date

QUALITY CONTROL REPORT  
EPA METHOD 8020 - BTEX  
Samples: 951068, 947664 and 947665

QA/QC for 10/17/95 Sample Set

LABORATORY CALIBRATION CHECKS, LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
					YES	NO
ICV LA-45473 50 PPB					RANGE	
Benzene	Standard	50.0	52.2	104.4	75 - 125 %	X
Toluene	Standard	50.0	52.2	104.4	75 - 125 %	X
Ethyl benzene	Standard	50.0	52.4	104.8	75 - 125 %	X
m & p - Xylene	Standard	100	106	106.1	75 - 125 %	X
o - Xylene	Standard	50.0	52.4	104.8	75 - 125 %	X
LCS LA-45476 25 PPB					RANGE	
Benzene	Standard	25.0	26.1	104.4	39 - 150	X
Toluene	Standard	25.0	26.4	105.6	46 - 148	X
Ethyl benzene	Standard	25.0	26.4	105.6	32 - 160	X
m & p - Xylene	Standard	50	53.3	106.6	Not Given	X
o - Xylene	Standard	25.0	26.3	105.2	Not Given	X
CCV LA-45473 50 PPB					RANGE	
Benzene	Standard	50.0	54.4	108.8	75 - 125 %	X
Toluene	Standard	50.0	51.8	103.6	75 - 125 %	X
Ethyl benzene	Standard	50.0	51.5	103.0	75 - 125 %	X
m & p - Xylene	Standard	100	104	104.4	75 - 125 %	X
o - Xylene	Standard	50.0	51.7	103.4	75 - 125 %	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
951068					RANGE	
Benzene	Matrix Duplicate	29.5	29.5	0	+/- 20 %	X
Toluene	Matrix Duplicate	<2.5	<2.5	0	+/- 20 %	X
Ethyl benzene	Matrix Duplicate	<2.5	<2.5	0	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<5.0	<5.0	0	+/- 20 %	X
o - Xylene	Matrix Duplicate	<2.5	<2.5	0	+/- 20 %	X

Narrative: Acceptable.

# EL PASO NATURAL GAS - FIELD SERVICES L

QUALITY CONTROL REPORT  
EPA METHOD 8020 - BTEX  
Samples: 951068, 947664 and 947665

## LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED	SAMPLE RESULT	SPIKE SAMPLE RESULT	ZR	ACCEPTABLE YES NO
2nd Analysis 951068	PPB	PPB	PPB		RANGE
Benzene	50	29.5	88.1	117.2	75 - 125 % X
Toluene	50	<2.5	53.8	107.6	75 - 125 % X
Ethyl benzene	50	<2.5	56.9	113.8	75 - 125 % X
m & p - Xylene	100	<5.0	110.8	110.8	75 - 125 % X
o - Xylene	50	<2.5	54.8	109.6	75 - 125 % X

Narrative: Acceptable.

## ADDITIONAL ANALYTICAL BLANKS:

SAMPLE ID	SOURCE	PPB	STATUS
AUTO BLANK			
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

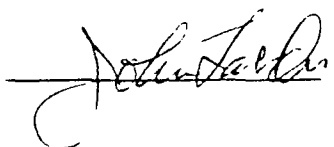
SAMPLE ID	SOURCE	PPB	STATUS
SOIL VIAL BLANK			
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID	SOURCE	PPB	STATUS
CARRYOVER CHECK		(None performed with this set)	
Benzene	Vial + Boiled Water	<2.5	NA
Toluene	Vial + Boiled Water	<2.5	NA
Ethyl benzene	Vial + Boiled Water	<2.5	NA
Total Xylenes	Vial + Boiled Water	<7.5	NA

Narrative: Acceptable.

Approved By:



Date: 18-Oct-95



Analytical**Technologies**, Inc.

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

ATI I.D. 510366

November 9, 1995

El Paso Natural Gas  
P.O. Box 4990  
Farmington, NM 87499

Project Name/Number: CHACO PLT MW8 X53986

Attention: John Lambdin

On 10/18/95, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** sample(s). The sample(s) were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

All analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

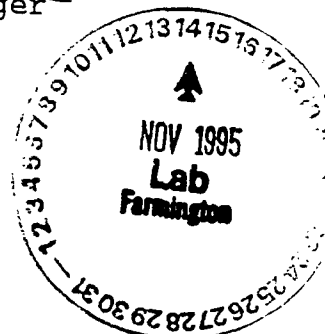
If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Kimberly D. McNeill  
Project Manager

MR:jt

Enclosure

H. Mitchell Rubenstein, Ph.D.  
Laboratory Manager





Analytical**Technologies**, Inc.

CLIENT : EL PASO NATURAL GAS      DATE RECEIVED : 10/18/95  
PROJECT # : X53986  
PROJECT NAME : CHACO PLT MW8      REPORT DATE : 11/09/95

ATI ID: 510366

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	951068 Chaco Plant MW #8	AQUEOUS	10/16/95



---TOTALS---

<u>MATRIX</u>	<u>#SAMPLES</u>
AQUEOUS	1

ATI STANDARD DISPOSAL PRACTICE

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

# TOTAL METALS

Sample ID

951068

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: Chaco Plt MW-8/EPN -- 510366

Date Collected: 10/16/95

Lab Sample ID: 95-10-164-01

Prep Date: 10/20, 24/95

Sample Matrix: Water

Date Analyzed: 10/23, 24/95

Analyte	Modified Method	Concentration mg/L	Detection Limit mg/L	WQCC Limits
Aluminum	6010	2.8	0.2	5.0 mg/L
Arsenic	6010	0.05	0.01	0.10 mg/L
Barium	6010	0.1	0.1	1.00 mg/L
Boron	6010	0.4	0.1	0.75 mg/L
Cadmium	6010	ND	0.005	
Chromium	6010	ND	0.01	
Cobalt	6010	ND	0.01	
Copper	6010	ND	0.01	
Iron	6010	2.2	0.1	1.0 mg/L
Lead	6010	ND	0.003	
Manganese	6010	0.25	0.01	0.2 mg/L
Mercury	7470	ND	0.0002	
Molybdenum	6010	ND	0.01	
Nickel	6010	ND	0.02	
Selenium	6010	ND	0.005	
Silver	6010	ND	0.01	
Zinc	6010	0.07	0.02	10.0 mg/L

ND = Not Detected



Analytical Technologies, Inc.

## TOTAL METALS

Sample ID

Reagent Blank

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Date Collected: N/A

Client Project ID: Chaco Plt MW-8/EPN -- 510366

Prep Date: 10/20, 24/95

Lab Sample ID: RB 95-10-164

Date Analyzed: 10/23, 24/95

Analyte	Modified Method	Concentration mg/L	Detection Limit mg/L
Aluminum	6010	ND	0.2
Arsenic	6010	ND	0.01
Barium	6010	ND	0.1
Boron	6010	ND	0.1
Cadmium	6010	ND	0.005
Chromium	6010	ND	0.01
Cobalt	6010	ND	0.01
Copper	6010	ND	0.01
Iron	6010	ND	0.1
Lead	6010	ND	0.003
Manganese	6010	ND	0.01
Mercury	7470	ND	0.0002
Molybdenum	6010	ND	0.01
Nickel	6010	ND	0.02
Selenium	6010	ND	0.005
Silver	6010	ND	0.01
Zinc	6010	ND	0.02

ND = Not Detected

28  
10/25/95



Analytical Technologies, Inc.

# TOTAL METALS MATRIX SPIKE

Sample ID

Lab Name: Analytical Technologies, Inc.

In House

Client Name: ATI-NM

Lab Sample ID: 95-10-163-01

Prep Date: 10/20, 24/95

Sample Matrix: Water

Date Analyzed: 10/23, 24/95

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec (limits 80-120%)	Flags
Aluminum	2.0	< 0.2	2.1	105	
Arsenic	2.0	< 0.01	2.0	100	
Barium	2.0	< 0.1	2.0	100	
Boron	1.0	0.2	1.2	100	
Cadmium	0.050	< 0.005	0.049	98	
Chromium	0.20	0.01	0.21	100	
Cobalt	0.50	< 0.01	0.48	96	
Copper	0.25	< 0.01	0.25	100	
Iron	1.0	0.2	1.2	100	
Lead	0.50	< 0.003	0.49	98	
Manganese	0.50	< 0.01	0.48	96	
Mercury	0.0020	< 0.0002	0.0020	100	
Molybdenum	1.0	< 0.01	0.98	98	
Nickel	0.50	< 0.02	0.49	98	
Selenium	2.0	< 0.005	2.0	100	
Silver	0.20	< 0.01	0.21	105	
Zinc	0.50	0.11	0.59	96	

JMS/45





Analytical Technologies, Inc.

**TOTAL METALS  
MATRIX SPIKE DUPLICATE**

Sample ID

In House

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Lab Sample ID: 95-10-163-01

Prep Date: 10/20, 24/95

Sample Matrix: Water

Date Analyzed: 10/23, 24/95

Analyte	MSD Conc. mg/L	MSD % Rec (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Aluminum	2.1	105	0	
Arsenic	2.0	100	0	
Barium	2.1	105	5	
Boron	1.2	100	0	
Cadmium	0.050	100	2	
Chromium	0.21	100	0	
Cobalt	0.48	96	0	
Copper	0.25	100	0	
Iron	1.2	100	0	
Lead	0.48	96	2	
Manganese	0.49	98	2	
Mercury	0.0021	105	5	
Molybdenum	0.99	99	1	
Nickel	0.50	100	2	
Selenium	2.0	100	0	
Silver	0.21	105	0	
Zinc	0.60	98	2	

2/8/95

## POLYNUCLEAR AROMATIC HYDROCARBONS

Method 8310



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.

Client Name: ATI-NM

Client Project ID: Chaco Plt MW-8/EPN -- 510366

Lab Sample ID: 95-10-164-01

Sample Matrix: Water

Cleanup: N/A

Sample ID

951068

Date Collected: 10/16/95

Date Extracted: 10/23/95

Date Analyzed: 11/2/95

Sample Volume: 1000 mL

Final Volume: 10 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	5.0
Acenaphthylene	ND	10
1-Methylnaphthalene	10.50	10
2-Methylnaphthalene	6 J	10
Acenaphthene	ND	10
Fluorene	3.6	1.0
Phenanthrene	ND	0.50
Anthracene	ND	1.0
Fluoranthene	ND	1.0
Pyrene	ND	0.50
Benzo(a)anthracene	ND	0.50
Chrysene	ND	0.50
Benzo(b)fluoranthene	ND	1.0
Benzo(k)fluoranthene	ND	0.50
Benzo(a)pyrene	ND	0.50
Dibenzo(a,h)anthracene	ND	1.0
Benzo(g,h,i)perylene	ND	1.0
Indeno(1,2,3-c,d)pyrene	ND	1.0

WQCC Limits

TOTAL  
30.0 ug/L

0.7 ug/L

## SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	81	15 - 117

ND = Not Detected at or above client requested detection limit.

J = Estimated value. Below requested detection limits.

## POLYNUCLEAR AROMATIC HYDROCARBONS

Method 8310



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.

Client Name: ATI-NM

Client Project ID: Chaco Plt MW-8/EPN -- 510366

Lab Sample ID: WRB1 10/23/95

Sample Matrix: Water

Cleanup: N/A

Sample ID

Reagent Blank

Date Collected: N/A

Date Extracted: 10/23/95

Date Analyzed: 11/2/95

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.50
Acenaphthylene	ND	1.0
1-Methylnaphthalene	ND	1.0
2-Methylnaphthalene	ND	1.0
Acenaphthene	ND	1.0
Fluorene	ND	0.10
Phenanthrene	ND	0.050
Anthracene	ND	0.10
Fluoranthene	ND	0.10
Pyrene	ND	0.050
Benzo(a)anthracene	ND	0.050
Chrysene	ND	0.050
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.050
Benzo(a)pyrene	ND	0.050
Dibenzo(a,h)anthracene	ND	0.10
Benzo(g,h,i)perylene	ND	0.10
Indeno(1,2,3-c,d)pyrene	ND	0.10

## SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	92	15 - 117

ND = Not Detected at or above client requested detection limit.

  
11/5/95



Analytical Technologies, Inc.

## POLYNUCLEAR AROMATIC HYDROCARBONS BLANK SPIKE

Method 8310

Lab Name: Analytical Technologies Inc.

Lab Sample ID: WBS1,2 10/23/95

Client Name: ATI-NM

Date Extracted: 10/23/95

Client Project ID: Chaco Plt MW-8/EPN -- 510366

Date Analyzed: 11/2/95

Sample Matrix: Water

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Acenaphthylene	10	7.83	78	23 - 122
Phenanthrene	1.0	0.922	92	34 - 112
Pyrene	1.0	0.949	95	35 - 116
Dibenzo(a,h)anthracene	1.0	0.858	86	33 - 123
Benzo(k)fluoranthene	0.25	0.261	104	39 - 119

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Acenaphthylene	10	7.39	74	6	20
Phenanthrene	1.0	0.891	89	3	20
Pyrene	1.0	0.981	98	3	20
Dibenzo(a,h)anthracene	1.0	0.842	84	2	20
Benzo(k)fluoranthene	0.25	0.252	101	3	20

## SURROGATE RECOVERY BS/BSD

Analyte	% Recovery(BS)	% Recovery(BSD)	% Rec Limits
2-Chloroanthracene	96	94	15 - 117

4/15/95



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

# CHAIN OF CUSTODY

DATE: 12-16-95 PAGE 1 OF 1

ATLAB.I.D.

510366

PROJECT MANAGER: JOHN CAMBON

ANALYSIS REQUEST

COMPANY: EL PASO NATURAL GAS CO.  
 ADDRESS: P.O. Box 4990  
FARMINGTON N.M. 87499  
 PHONE: 505-599-2144  
 FAX: 505-599-2261  
 BILL TO: SAME AS ABOVE  
 COMPANY: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_

SAMPLE ID DATE TIME MATRIX LAB ID

951068 10/18 1335 WATER -01

Petroleum Hydrocarbons (418.1)  
 (MOD 8015) Gas/Diesel  
 Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)  
 BTXE/MTBE (8020)  
 Chlorinated Hydrocarbons (601/8010)  
 Aromatic Hydrocarbons (602/8020)  
 SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.  
 Pesticides/PCB (608/8080)  
 Herbicides (615/8150)  
 Base/Neutral/Acid Compounds GC/MS (625/8270)  
 Volatile Organics GC/MS (624/8240)  
 Polynuclear Aromatics (610/8310) X  
 SDWA Primary Standards - Arizona  
 SDWA Secondary Standards - Arizona  
 SDWA Primary Standards - Federal  
 SDWA Secondary Standards - Federal  
X AL, AS, BA, Cd, Cr, CO, Cu, Fe,  
26, Hg, Mn, Ni, Se, Ag, Zn, B, Mo  
 The 13 Priority Pollutant Metals  
 RCRA Metals by Total Digestion  
 RCRA Metals by TCLP (1311)

3 NUMBER OF CONTAINERS

PROJECT INFORMATION SAMPLE RECEIPT

PROJ. NO.: 453986 NO. CONTAINERS: 3  
 PROJ. NAME: CAPCO RT MW-8 CUSTODY SEALS: Q/N/NA  
 P.O. NO.: \_\_\_\_\_ RECEIVED INTACT: Y  
 SHIPPED VIA: FBO & T RECEIVED COLD: Y 40°F

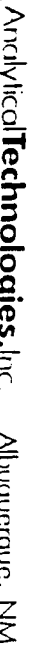
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

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

Comments: CHANGE TO:  
108-53986-84-0001-0012-51-7210  
SEND RESULTS TO JOHN CAMBON  
AT THE ABOVE ADDRESS.

SAMPLED & RELINQUISHED BY: 1. HELINQUISHED BY: 2. RELINQUISHED BY: 3.

Signature: John Cambon Time: 1:30  
 Printed Name: John Cambon Date: 12-16-95  
 Company: EL PASO NATURAL GAS Phone: 505-599-2144  
 RECEIVED BY: 1. Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 RECEIVED BY: 2. Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 RECEIVED BY: 3. Signature: Andre Garcia Time: 1130  
 Printed Name: Andre Garcia Date: 12/18  
 Company: Analytical Technologies, Inc.



Kim Mendell

# Chain of Custody

164  
#6  
GK-10  
B4

10/4/95  
PAGE 1 OF 1

NETWORK PROJECT MANAGER: HEITIA-KRAKOWSKI

**COMPANY:** Analytical Technologies, Inc.

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

**CLIENT PROJECT MANAGER:**

Kim Menzies

[illegible]

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJECT NUMBER:	510366	TOTAL NUMBER OF CONTAINERS		SAN DIEGO		Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>
PROJECT NAME:	CLVACO PLT MW-8/EPN	CHAIN OF CUSTODY SIALS		FT COLLINS		Time:	5:15	Time:	
QC LEVEL:	STD IV	INTACT?		HEWITON		Printed Name:	JANNA SHEL	Printed Name:	
QC REQUIRED:	MS MSD BLANK	RECEIVED GORDON/ACOLD		PENSACOLA		Date:	12/8/95	Date:	
TAT:	STANDARD RUSHI	LAB NUMBER:		PORTLAND		Company:	Analytical Technologies, Inc.	Company:	
				PHOENIX		Albuquerque			
						RECEIVED BY: (LAB)	1.	RECEIVED BY: (LAB)	2.
DUE DATE:	11/1			FIREFOUNT		Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>
RUSH SURCHARGE:	N0					Time:		Time:	9:20
CLIENT DISCOUNT:	15%					Printed Name:	J. H. H.	Printed Name:	
						Date:	10/18/95	Date:	
						Company:		Company:	

Changed my to mn per  
Kim McNeill request  
10/19/95 Jred

1W0H KM1020

Jred 11

ATT-20



**Natural Gas Company**

## CHAIN OF CUSTODY RECORD

[illegible]

November 14, 1995

Mr. John Merrick  
H. C. Price Company  
5353 Alpha Rd.  
Dallas, TX 75240

Re: Use of Noncontact Wastewater for Use in Oil and Gas Exploration

Dear Mr. Merrick:

You asked to use the uncontact wastewater generated and discharged at the El Paso Natural Gas Company ("El Paso") Chaco Plant pursuant to an approved New Mexico Oil Conservation Division Discharge plan. El Paso will allow H. C. Price Company to use the noncontact wastewater provided you agree in advance to the following:

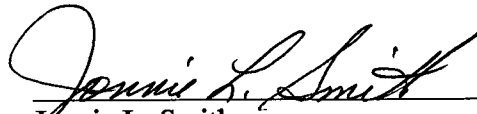
1. Prior to obtaining the wastewater from the Chaco Plant ponds, H.C. Price Company will notify the Chaco Plant Superintendent;
2. Use of the wastewater is limited to H.C. Price Company for its oil and natural gas exploration and production activities and will never be used in a way that allows the water to be discharged to any water of the U.S. as defined in the U.S. Clean Water Act (33 U.S.C. §§ 1251 to 1387) and the New Mexico Water Quality Act (N.M. Stat. Ann. §§ 74-6-1 to 74-6B-14);
3. The wastewater will never be discharged less than one hundred feet (100') from the nearest natural boundary of any wash or arroyo; and,
4. H.C. Price Company releases El Paso from liability, claims, or causes of action which may arise from the procurement, use, and discharge of the wastewater by H.C. Price Company, its agents, or its contractors



Mr. John Merrick  
H. C. Price Company  
November 14, 1995  
Page 2

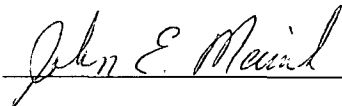
If H. C. Price Company agrees to abide by the above terms and conditions, please indicate its approved by signing in the space below and return this letter to me.

Very truly yours,

  
Jonnie L. Smith

AGREED TO AND ACCEPTED  
this 14 day November 1995.

H. C. Price Company

by   
its \_\_\_\_\_



**John Merrick**  
ASST. SUPERINTENDENT

**H.C. PRICE**  
CONSTRUCTION CO.  
FAX (214) 991-6059

5353 ALPHA ROAD  
DALLAS, TEXAS 75240  
(214) 458-1865

LOCAL OFFICE 632-3141  
320-7111 *M.G.*

April 10, 1995

Mr. Walter Bump  
FESCO Contracting Co.  
5500 U.S. Highway 64  
Farmington, NM 87401

Re: Use of Noncontact Wastewater for Use in Oil and Gas Exploration

Dear Mr. Bump:

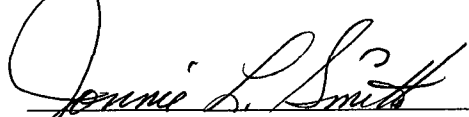
You asked to use the uncontact wastewater generated and discharged at the El Paso Natural Gas Company ("El Paso") Chaco Plant pursuant to an approved New Mexico Oil Conservation Division Discharge plan. El Paso will allow FESCO Contracting Company to use the noncontact wastewater provided you agree in advance to the following:

1. Prior to obtaining the wastewater from the Chaco Plant ponds, FESCO Contracting Co. will notify the Chaco Plant Superintendent;
2. Use of the wastewater is limited to FESCO Contracting Co. for its oil and natural gas exploration and production activities and will never be used in a way that allows the water to be discharged to any water of the U.S. as defined in the U.S. Clean Water Act (33 U.S.C. §§ 1251 to 1387) and the New Mexico Water Quality Act (N.M. Stat. Ann. §§ 74-6-1 to 74-6B-14);
3. The wastewater will never be discharged less than one hundred feet (100') from the nearest natural boundary of any wash or arroyo; and,
4. FESCO Contracting Co. releases El Paso from liability, claims, or causes of action which may arise from the procurement, use, and discharge of the wastewater by FESCO Contracting Co., its agents, or its contractors

Mr. Walter Bump  
FESCO Contracting Company  
April 10, 1995  
Page 2

If FESCO Contracting Co. agrees to abide by the above terms and conditions, please indicate its approved by signing in the space below and return this letter to me.

Very truly yours,

  
Jonnie L. Smith

AGREED TO AND ACCEPTED  
this 10 day April 1995.

FESCO Contracting Company

by Walter Bump

its \_\_\_\_\_

## Chaco Plant Non-Contact Waste Water Acceptance Log

Date	Company	Amount (Barrels)	Intended Use	Final Disposition of Water	Signature
April 10, 1985	FESCO CONTRACTING CO.	357.0	COMPACT SOIL FOR CRYSTALLINE PLANT - DUST CONTROL	SAME	[Signature]
April 11, 1985	FESCO CONTRACTING CO.	1372.0	COMPACT SOIL FOR CRYSTALLINE PLANT - DUST CONTROL	SAME	[Signature]
April 12, 1985	FESCO CONTRACTING CO.	1498.0	COMPACT SOIL FOR CRYSTALLINE PLANT - DUST CONTROL	SAME	[Signature]
April 13, 1985	FESCO CONTRACTING CO.	1498.0	COMPACT SOIL FOR CRYSTALLINE PLANT - DUST CONTROL	SAME	[Signature]
April 14, 1985	FESCO CONTRACTING CO.	958.0	COMPACT SOIL FOR CRYSTALLINE PLANT - DUST CONTROL	SAME	" " " "

# The Santa Fe New Mexican

Since 1849. We Read You.

E.M.N.R.D.: OIL CONSERVATION DIV.  
ATTN: SALLY MARTINEZ  
P.O. BOX 6429  
SANTA FE, N.M. 87505

AD NUMBER: 435840

ACCOUNT: 56689

LEGAL NO: 58512

P.O. #: 96199082997

164 LINES once at \$ 65.60  
Affidavits: 5.25  
Tax: 4.43  
Total: \$ 75.28

**NOTICE OF PUBLICATION**  
**STATE OF NEW MEXICO**  
**ENERGY, MINERALS**  
**AND NATURAL**  
**RESOURCES**  
**DEPARTMENT**  
**OIL CONSERVATION**  
**DIVISION**

other accidental discharges to the surface will be managed. Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan applications may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday thru Friday. Prior to the Director of the Oil Conservation Division shall rule on any proposed discharge plans or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Request for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the director determines that there is significant public interest. If no hearing is held, the Director will approve or disapprove the plans based on the information available. If a public hearing is held, the Director will approve the plans based on the information presented at the hearing. GIVEN under the Seal of the New Mexico Conservation Commission at Santa Fe, New Mexico, on this 31st day of October, 1995. charge is at a depth ranging from 220 feet to 810 feet with a total dissolved solids concentration of approximately 560 mg/l. The discharge plan addresses how spills, leaks, and

Pub. November 7, 1995

## AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO  
COUNTY OF SANTA FE

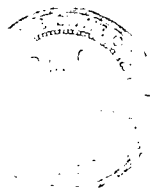
I, BETSY PERNER being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily news paper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication # 58512 a copy of which is hereto attached was published in said newspaper once each WEEK for ONE consecutive week(s) and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 7th day of NOVEMBER 1995 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/s/

Betsy Perner  
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 7th day of NOVEMBER A.D., 1995.

OK  
CS



OFFICIAL SEAL

STATE OF NEW MEXICO

Laura E. Harding 11/23/95  
MY COMMISSION EXPIRES

# The Santa Fe New Mexican

Since 1849. We Read You.

E.M.N.R.D.: OIL CONSERVATION DIV.  
ATTN: SALLY MARTINEZ  
P.O. BOX 6429  
SANTA FE, N.M. 87505

AD NUMBER: 435840

ACCOUNT: 56689

LEGAL NO: 58512

P.O. #: 96199082997

164 LINES once at \$ 65.60

Affidavits: 5.25

Tax: 4.43

Total: \$ 75.28

**NOTICE OF PUBLICATION**  
**STATE OF NEW MEXICO**  
**ENERGY, MINERALS**  
**AND NATURAL**  
**RESOURCES**  
**DEPARTMENT**  
**OIL CONSERVATION**  
**DIVISION**

other accidental discharges to the surface will be managed.  
Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan mission Regulations, the following discharge plan application at the above address has been submitted to the Director of the Oil Conservation Division, 2040 S. Pacheco, Santa Fe, New Mexico, 87505, Telephone (505) 827-7131. Conservation Division shall allow at least thirty (30) days Gas Company, Patrick J. Marquez, Compliance Engineer, PO Box 4990, Farmington, New Mexico, 87499, has submitted a request to modify their existing discharge plan for their Chaco Gas Processing Plant located in Section 16, Township 26 North, Range 12 West, NMPM, San Juan County, New Mexico. The modification consists of adding a cryogenic unit to the plant to separate the lean oil liquids from the gas. If a public hearing is held, the Director will approve or disapprove the plans based on the information available. If a public hearing is held, the Director will approve the plans based on the information in the plans and information stored in an above ground double lined evaporation pond equipped with leak detection. Groundwater most likely to be affected in the event of an accidental discharge is at a depth ranging from 220 feet to 810 feet with a total dissolved solids concentration of approximately 560 mg/l. The discharge plan addresses how spills, leaks, and

## AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO  
COUNTY OF SANTA FE

I, BETSY PERNER being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily news paper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication # 58512 a copy of which is hereto attached was published in said newspaper once each WEEK for ONE consecutive week(s) and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 7th day of NOVEMBER 1995 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/

Betsy Perner  
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this  
7th day of NOVEMBER A.D., 1995.

OK  
CS

OFFICIAL SEAL

LAURA E. HARDING

NOTARY PUBLIC - STATE OF NEW MEXICO  
Laura E. Harding 11/23/95  
MY COMMISSION EXPIRES

# AFFIDAVIT OF PUBLICATION

No. 35506

STATE OF NEW MEXICO

County of San Juan:

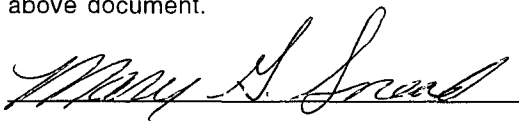
ROBERT LOVETT being duly sworn says: That he is the Classified Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):

Thursday, November 9, 1995

and the cost of publication is: \$64.84



On 11-9-95 ROBERT LOVETT appeared before me, whom I know personally to be the person who signed the above document.

  
My Commission Expires March 21, 1998



## COPY OF PUBLICATION

### Legals



#### NOTICE OF PUBLICATION

#### STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan application has been submitted to the Director of the Oil Conservation Division, 2040 S. Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(GW-71) - El Paso Natural Gas Company, Patrick J. Marquez, Compliance Engineer, PO Box 4990, Farmington, New Mexico, 87499, has submitted a request to modify their existing discharge plan for their Chaco Gas Processing Plant located in Section 16, Township 26 North, Range 12 West, NMMP, San Juan County, New Mexico. The modification consists of adding a cryogenic unit to compliment/replace the existing lean oil liquids extraction facilities. Approximately 2405 gallons per day of produced water with total dissolved solids concentration of 1,000 mg/l will be stored in an above ground double lined evaporation pond equipped with leak detection. Groundwater most likely to be affected in the event of an accidental discharge is at a depth ranging from 220 feet to 810 feet with a total dissolved solids concentration of approximately 560 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan applications may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday thru Friday. Prior to ruling on any proposed discharge plans or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Request for public hearing shall set forth the reasons why a hearing shall be held. A hearing will be held if the director determines that there is significant public interest.

If no hearing is held, the Director will approve or disapprove the plans based on the information available. If a public hearing is held, the Director will approve the plans based on the information in the plans and information presented at the hearing.

GIVEN under the Seal of New Mexico Conservation Commission at Santa Fe, New Mexico, on this 31st of October, 1995.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION  
/s/ William J. Lemay  
WILLIAM J. LEMAY, Director

SEAL

Legal No. 35506 published in The Daily Times, Farmington, New Mexico on Thursday, November 9, 1995.



# AFFIDAVIT OF PUBLICATION

No. 35506

STATE OF NEW MEXICO

County of San Juan:

ROBERT LOVETT being duly sworn says: That he is the Classified Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):

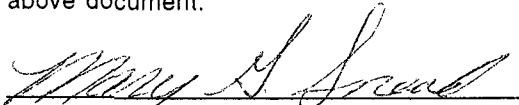
Thursday, November 9, 1995

and the cost of publication is: \$64.84



On 11-9-95 ROBERT LOVETT

appeared before me, whom I know personally to be the person who signed the above document.



My Commission Expires March 21, 1998

## COPY OF PUBLICATION

### Legals

#### NOTICE OF PUBLICATION

#### STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan application has been submitted to the Director of the Oil Conservation Division, 2040 S. Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(GW-71) - El Paso Natural Gas Company, Patrick J. Marquez, Compliance Engineer, PO Box 4990, Farmington, New Mexico, 87499, has submitted a request to modify their existing discharge plan for their Chaco Gas Processing Plant located in Section 16, Township 26 North, Range 12 West, NMPM, San Juan County, New Mexico. The modification consists of adding a cryogenic unit to comply/replace the existing lean oil liquids extraction facilities. Approximately 2405 gallons per day of produced water with total dissolved solids concentration of 1,000 mg/l will be stored in an above ground double lined evaporation pond equipped with leak detection. Groundwater most likely to be affected in the event of an accidental discharge is at a depth ranging from 220 feet to 810 feet with a total dissolved solids concentration of approximately 560 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan applications may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday thru Friday. Prior to ruling on any proposed discharge plans or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Request for public hearing shall set forth the reasons why a hearing shall be held. A hearing will be held if the director determines that there is significant public interest.

If no hearing is held, the Director will approve or disapprove the plans based on the information available. If a public hearing is held, the Director will approve the plans based on the information in the plans and information presented at the hearing.

GIVEN under the Seal of New Mexico Conservation Commission at Santa Fe, New Mexico, on this 31st of October, 1995:

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION  
/s/ William J. Lemay  
WILLIAM J. LEMAY, Director

SEAL

Legal No. 35506 published in The Daily Times, Farmington, New Mexico on Thursday, November 9, 1995.

## NOTICE OF PUBLICATION

### STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan application has been submitted to the Director of the Oil Conservation Division, 2040 S. Pacheco, Santa Fe, New Mexico, 87505, Telephone (505) 827-7131:

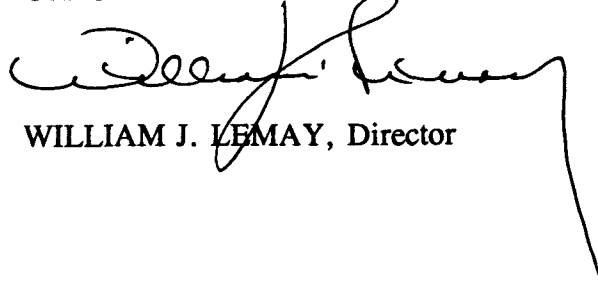
**(GW-71) - El Paso Natural Gas Company, Patrick J. Marquez, Compliance Engineer, PO Box 4990, Farmington, New Mexico, 87499, has submitted a request to modify their existing discharge plan for their Chaco Gas Processing Plant located in Section 16, Township 26 North, Range 12 West, NMPM, San Juan County, New Mexico. The modification consists of adding a cryogenic unit to compliment/replace the existing lean oil liquids extraction facilities. Approximately 2405 gallons per day of produced water with total dissolved solids concentration of 1,000 mg/l will be stored in an above ground double lined evaporation pond equipped with leak detection. Groundwater most likely to be affected in the event of an accidental discharge is at a depth ranging from 220 feet to 810 feet with a total dissolved solids concentration of approximately 560 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.**

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan applications may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday thru Friday. Prior to ruling on any proposed discharge plans or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Request for public hearing shall set forth the reasons why a hearing shall be held. A hearing will be held if the director determines that there is significant public interest.

If no hearing is held, the Director will approve or disapprove the plans based on the information available. If a public hearing is held, the Director will approve the plans based on the information in the plans and information presented at the hearing.

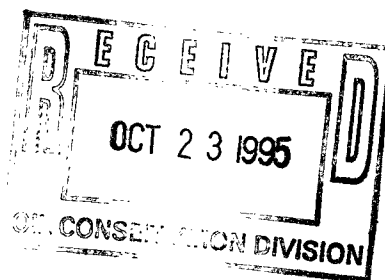
GIVEN under the Seal of New Mexico Conservation Commission at Santa Fe, New Mexico, on this 31st of October, 1995.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY, Director

SEAL



P. O. BOX 4990  
FARMINGTON, NEW MEXICO 87499

Mr. Chris Eustice  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504

October 19, 1995

**Subject: Request Major Modification to Discharge Plan GW-071 - Chaco Processing Plant**

Dear Mr. Eustice:

El Paso Natural Gas Company requests approval for Major Modification to the current discharges from Chaco Plant. The discharges as outlined below are scheduled to begin in mid-January of 1996.

### **Major Modification to Discharge Plan GW-071**

#### **Cryo Plant**

EPNG is currently building a Cryogenic Plant to compliment/replace the existing lean oil liquids extraction facilities at Chaco Plant. The first phase of the Cryo Plant is expected to be on-line in January of 1996 and will replace the existing "A" Gasoline Plant. The operation of a 400 MMSCFD plant will be the result of the first phase of construction with an additional 200 MMSCFD in operation shortly thereafter (Phase II - May 1996). A plot plan is provided under Tab A showing the location of the Cryo in relation to Chaco Plant.

The operation of the new facility is expected to increase the contact water<sup>1</sup> discharge due to gas dehydration from 0.96 gpm to 2.50 gpm as described in Table 1.

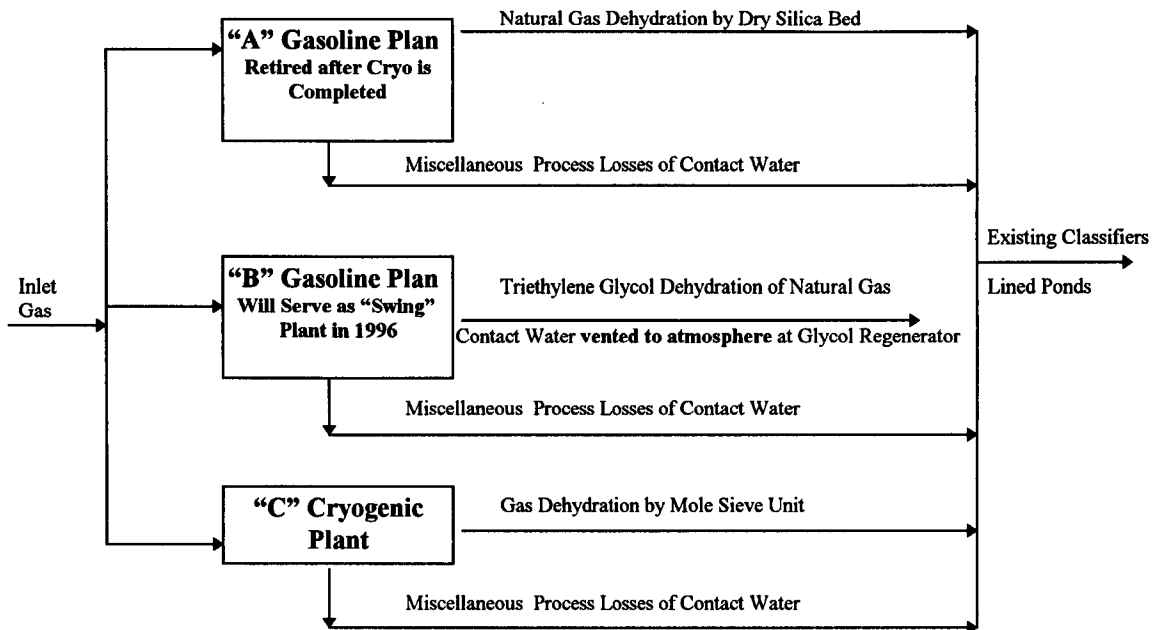
**Table 1 Contact Water by Gas Dehydration**

	<b><u>Current Operation</u></b>	<b><u>Future Operation Phase I</u></b>	<b><u>Future Operation Phase II</u></b>	<b><u>Units</u></b>	<b><u>Destination</u></b>
<b>A Plant</b>	11500	Retired	Retired	lbs H2O/Day	Lined Ponds
<b>B Plant</b>	10500	8400	4200	lbs H2O/Day	Vented to Atm.
<b>C Plant</b>	0	20000	30000	lbs H2O/Day	Lined Ponds
<b>H2O in GPM</b>	0.96	1.67	2.50	gpm	

All contact water<sup>1</sup> from the Cryo Plant will be discharged to the existing drain line, separated from the oil phase at the classifiers and then pumped to the lined ponds. The existing drain and classifier system operates well below its design limit, consequently, its capacity will not be jeopardized by the operation of the Cryo Plant. Figure 1 depicts contact water origins and destinations.

1. For the sake of this document, Contact Water is: a) produced water entrained in the natural gas which is removed by dehydration and b) water co-mingled with any petroleum product such as lubricating oil - this volume (b) is difficult to estimate for the new facility, therefore it is not reflected in the Table 1 volumes.

**Figure 1**



#### **Drain Lines**

Several drain systems will be employed to service the Cryo Plant; 1) Open Drain, 2) Closed Drain, 3) the Low Temperature Drain and 4) the Methyl Diethanolamine (MDEA) System. All drain systems are steel and will be integrity tested upon completion.

The *Open Drain System* will collect those drains which are open to the atmosphere and may receive lubricating oil, wash water, detergents and/or rain water. A below grade, 20 bbl, double walled tank will receive and then pump these liquids to the Closed Drain System. Double walls will provide a means for detecting leaks from this tank. A schematic of the tank and the equipment it services is provided under Tab B (DWG. 2CH-8-P423).

The *Closed Drain System* will service those process vessels which vent at pressures above atmosphere. This system will de-pressure at an above ground expansion vessel and then enter Chaco's existing drain system. A schematic of this expansion vessel and the equipment it services is provided under Tab B (DWG. 2CH-8-P434).

The *Low Temperature Drain System* will service those process vessels which vent volatile, low temperature liquids. This system will be stainless steel and will collect in an above ground vessel where the liquids will be heated, vaporized and flared. A schematic of this vessel and the equipment it services is provided under Tab B (DWG. 2CH-8-P433).

The *MDEA Drain System* will serve in the MDEA product treating system of the Plant. MDEA will be collected in a below grade, 20 bbl, double walled tank and then returned to the process. A schematic of this system is provided under Tab B (DWG. 2CH-8-P427).

#### **Non-Contact Discharge**

The Cryo Plant will utilize some cooling capacity from the existing cooling towers at Chaco. The required capacity will be less than that necessary for the operation of "A" Gasoline Plant (retired in 1996). All non-contact water will be discharged to the existing unlined, non-contact evaporation ponds.

**Storage Vessels**

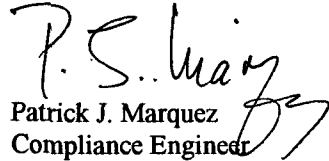
One 500 bbl Amine storage tank and one 100 bbl Lubricating Oil storage tank will service the Cryo Plant equipment. Both tanks will be above ground, bermed and labeled appropriately. Tank locations within the Cryo Plant boundaries is provided under Tab C (DWG.2CH-8-P444).

**Design Specifications**

This information is provided according to the design specifications available at this time. Should the "as build" specifications regarding vessel sizes, discharge volumes or discharge destinations change, EPNG shall inform the NMOCD and request approval.

EPNG respectfully requests approval to discharge as described above. A check in the amount of \$1717.50 for modification processing will be prepared upon approval. If you require further information, please do not hesitate to call at 505-599-2175.

Thank you,

  
Patrick J. Marquez  
Compliance Engineer

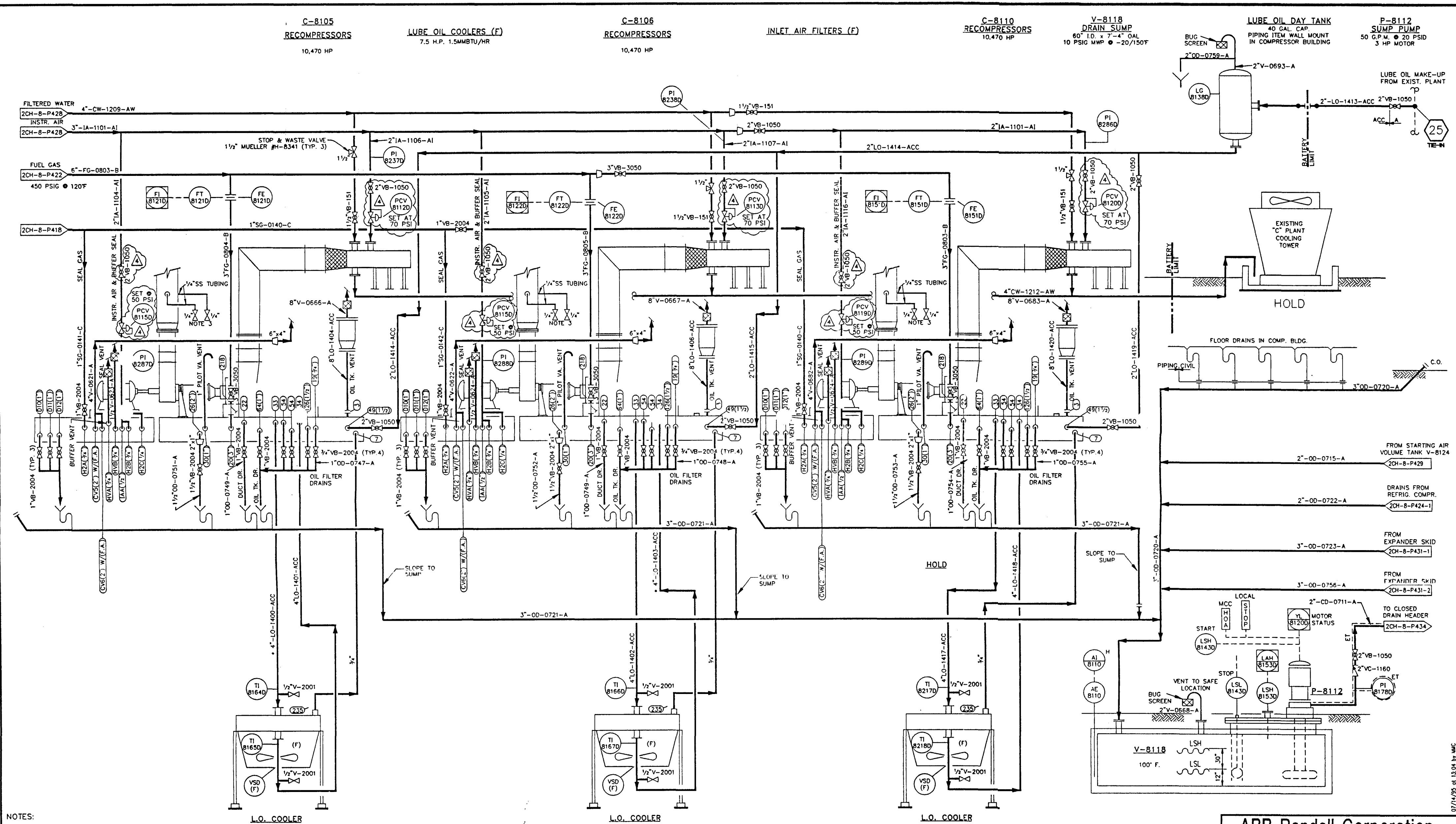
xc: w/o attachments

Denny Foust - NMOCD Aztec

Sandra Miller/David Bays/File: 5212 Regulatory








NOTES:

- (F) DENOTES FURNISHED W/TURBINE/COMPRESSOR PACKAGE.
- \* L.O. PIPING TO BE STAINLESS STEEL.
- VALVES TO BE ACCESSIBLE FROM GRADE.

															ENG. RECORD		DATE		 <b>El Paso</b> NATURAL GAS COMPANY		CHACO CRYOGENIC PLANT RECOMPRESSOR UTILITY PROCESS AND INSTRUMENTATION DIAGRAM				SCALE: NONE W.O.: DWG. NO. 2CH-8-P423 REV. 4											
															DRAFTING DESIGN	GHR	6-7-94																			
															CAD DRAFTING	GHR	6-7-94																			
															CHECKED																					
															PROJECT APPROVAL																					
															SURVEY DATE																					
															R/W NUMBER																					
															COMPUTER SAVE NAME		2CH8P423																			
															NO.		DATE		BY		DESCRIPTION		W.O.		APP.		PRT.		SEP.		DATE		TO		W.O.	
															FEVISIONS																					
															PRINT RECORD																					

4 7/17/95 MA REVISED AS NOTED	
3 6/08/95 MA REVISED AS NOTED	
2 04/18/95 MA ISSUED FOR CONSTRUCTION	
1 3/10/95 MA REVISED PER HAZOP REVIEW	
0 2/2/95 DH ISSUED FOR DESIGN	
E 12/13/94 DH REISSUED FOR APPROVAL FOR 600MM CASE	
D 11/21/94 DH REISSUED FOR 600MM ESTIMATE	
C 11/3/94 DH ISSUED FOR APPROVAL	
B 10/8/94 L.S. ISSUED FOR REVIEW	
A 7/16 DH ISSUED FOR PROPOSAL	

DWG. NO.		TITLE	
REFERENCE DRAWINGS			

LEGEND	

**ABB Randall Corporation**

AN ABB LUMMUS CREST COMPANY  
Houston, Texas  
ABBR JOB # 80152

**El Paso**  
NATURAL GAS COMPANY

CHACO CRYOGENIC PLANT  
RECOMPRESSOR UTILITY  
PROCESS AND INSTRUMENTATION DIAGRAM

SCALE: NONE DWG. NO. 2CH-8-P423 REV. 4

RECEIVED JUL 20 1995

V-8144  
CLOSED DRAIN  
K.O. DRUM  
24" DIA. X 8'-0" S/S  
150 PSIG MAWP @ -20/150°F

FH-8101  
FIRED HEATER  
THERMAL INCINERATOR

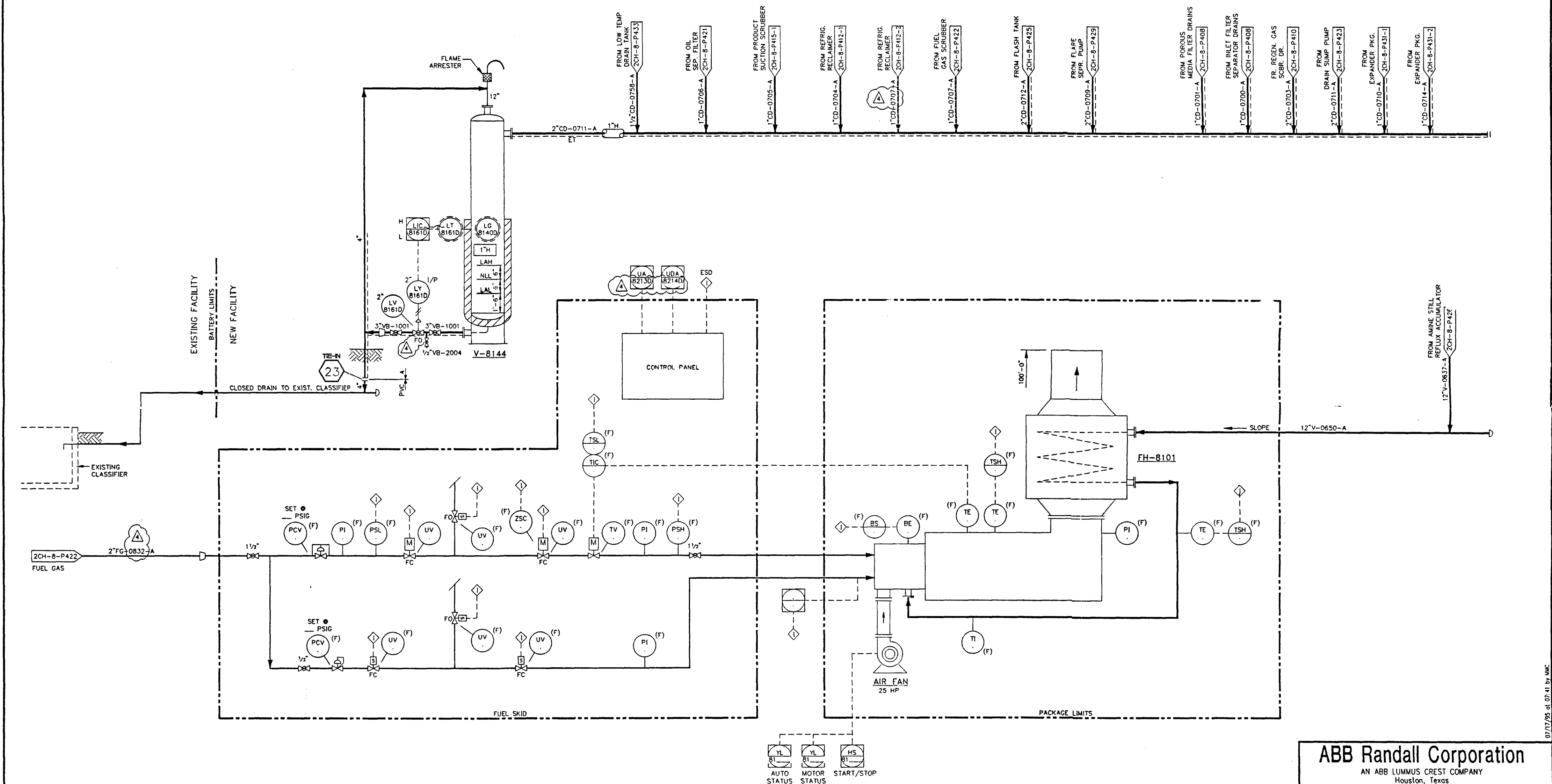


ABB Randall Corporation

AN ABB LUMMUS CREST COMPANY  
Houston, Texas  
ABBR JOB # 80152

**El Paso**  
NATURAL GAS COMPANY

CHACO CRYOGENIC PLANT  
VENT SYSTEM / VENT & CLOSED DRAIN SYSTEMS  
PROCESS AND INSTRUMENTATION DIAGRAM

SCALE: NONE DWG. NO. 2CH-8-P434 REV. 4

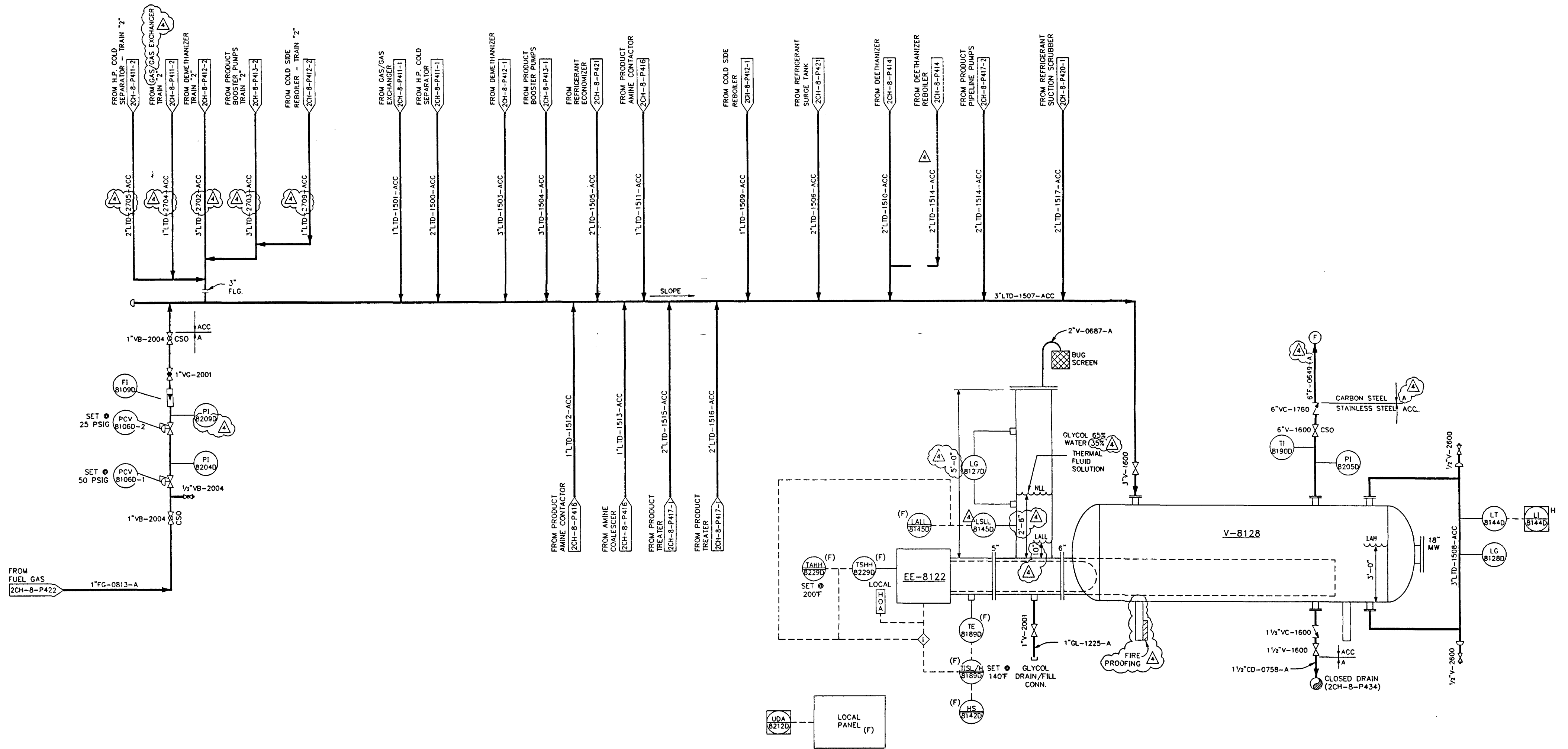
LEGEND				REFERENCE DRAWINGS				PROVISIONS				PRINT RECORD			
4	2/2/94	MA	REVISED AS NOTED												
3	6/08/93	MA	REVISED AS NOTED												
2	04/18/93	MA	ISSUED FOR CONSTRUCTION												
1	03/10/93	MA	REVISED PER HAZOP REVIEW												
0	02/02/93	DM	ISSUED FOR DESIGN												
C	12/13/94	DM	ISSUED FOR APPROVAL FOR 600MM CASE												
B	11/21/94	L.S.	RE-ISSUED FOR 600MM ESTIMATE												
A	11/10/94	L.S.	ISSUED FOR APPROVAL												
NO.	DATE	BY	DESCRIPTION	W.O.	APP.	PRT.	SER.	DATE	TO	W.O.	APP.	PRT.	SER.	DATE	TO

RECEIVED JUL 20 1995



EE-8122  
LOW TEMP DRAIN ELECTRIC HEATER  
25 K.W.  
75 PSIG MAWP @ -150/150°F

V-8128  
LOW TEMPERATURE  
DRAIN SEPARATOR  
48" I.D. x 16'-0" S/S  
75 PSIG MAWP @ -150/150°F



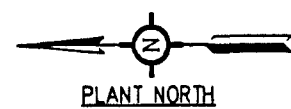
REVISIONS										APP. RECORD									
NO.	DATE	BY	DESCRIPTION	W.O.	APP.	PRT.	SEP.	DATE	TO	W.O.	ENG. RECORD	DATE	DESIGN	DATE	CAD DRAFTING	DATE	CHECKED	DATE	PROJECT APPROVAL
4	7/17/95	MA	REVISED AS NOTED									10/27/1994		10/27/1994					
3	6/08/95	MA	REVISED AS NOTED																
2	4/18/95	MA	ISSUED FOR CONSTRUCTION																
1	3/10/94	MA	REVISED PER HAZOP REVIEW																
D	12/22/94	DM	ISSUED FOR DESIGN																
C	12/13/94	DM	ISSUED FOR APPROVAL FOR 600MM CASE																
B	11/21/94	LS	RE-ISSUED FOR 600MM ESTIMATE																
A	11/10/94	LS	ISSUED FOR APPROVAL																
DWG. NO.										TITLE									
REFERENCE DRAWINGS										REVISIONS									
LEGEND										PRINT RECORD									
FUB (Rev. 11/93)										COMPUTER SAVE NAME									

ABB Randall Corporation  
AN ABB LUMMUS CREST COMPANY  
Houston, Texas  
ABBR JOB # 80152

ENG. RECORD	DATE
DRAFTING	10/27/1994
DESIGN	R.D.J.
CAD DRAFTING	10/27/1994
CHECKED	
PROJECT APPROVAL	
SURVEY DATE	
R/W NUMBER	
COMPUTER SAVE NAME	2CH8P433

CHACO CRYOGENIC PLANT  
LOW TEMP DRAIN SYSTEM  
PROCESS AND INSTRUMENTATION DIAGRAM  
SCALE: NONE DWG. NO. 2CH-8-P433 REV. 4

RECEIVED JUL 2 0 1995



# FOR EQUIPMENT

COMPRESSOR BUILDING  
CONTROL ROOM/M.C.C.  
REGENERATION GAS COMPRESSOR  
EXPANDER/COMPRESSOR  
DEETHANIZER PRODUCT/REFRIG. COMP.  
DEETHANIZER PRODUCT/REFRIG. COMP.  
RECOMPRESSOR  
RECOMPRESSOR  
INSTRUMENT AIR PACKAGE

EE-8101 REGENERATION GAS COOLER  
EE-8102 NGL PRODUCT SUBCOOLER  
EE-8103 PROPANE PRODUCT COOLER  
EE-8104 DEETHANIZER PRODUCT CONDENSER  
EE-8105 PIPELINE PRODUCT COOLER  
EE-8106 RECOMPRESSOR DISCHARGE COOLERS  
EE-8107 REFRIGERANT CONDENSERS  
EE-8108 LEAN AMINE COOLER  
EE-8109 AMINE STILL REFLUX CONDENSER  
EE-8110 GAS/GAS EXCHANGER  
EE-8111 COLD SIDE REBOILER  
EE-8112 SIDE REBOILER  
EE-8113 INLET GAS CHILLER  
EE-8114 BOTTOMS REBOILER  
EE-8115 REFRIGERANT RECLAIMER  
EE-8116 REFRIGERANT SUB COOLER  
EE-8117 DEETHANIZER REBOILER  
EE-8118 WINGATE PRODUCT COOLER (OUTSIDE BATTERY LIMITS)  
EE-8119 LEAN/RICH EXCHANGER  
EE-8120 AMINE STILL REBOILER  
EE-8121 AMINE STILL REBOILER  
EE-8122 DRAIN SEPARATOR ELECTRIC HEATER  
EE-8123 REGENERATION GAS HEATER  
EE-8124 REGENERATION GAS HEATER  
EE-8125 HOT OIL HEATER  
EE-8126 HOT OIL HEATER

FT-8101 INLET FILTER SEPARATOR  
FT-8102 POROUS MEDIA FILTER  
FT-8103 DUST FILTER  
FT-8104 AMINE COALESCER  
FT-8105 AMINE FILTER  
FT-8106 AMINE CHARCOAL FILTER  
FT-8107 OIL SEPARATOR FILTER

FL-8101 FLARE STACK (OUTSIDE BATTERY LIMITS)  
FL-8102 VENT STACK

P-8101/8102/8103 PRODUCT BOOSTER PUMPS  
P-8104/8105/8106 PRODUCT PIPELINE PUMPS  
P-8107/8108/8109 AMINE CIRCULATION PUMPS  
P-8110/8111 HOT OIL CIRCULATION PUMPS  
P-8112 DRAIN SUMP PUMP  
P-8113/8114 AMINE BOOSTER PUMPS  
P-8115 ANTIFOAM PUMP  
P-8116/8117 AMINE STILL REFLUX PUMPS  
P-8118 AMINE MAKE-UP PUMP  
P-8119 ENGINE OIL TRANSFER PUMP  
P-8120 FLARE SEPARATOR PUMP

V-8101/8102/8103 DEHYDRATORS  
V-8104 REGEN. GAS SCRUBBER  
V-8105 HIGH PRESSURE COLD SEPARATOR  
V-8106 REFRIGERATION K.O. DRUM  
V-8107 DEMETHANIZER  
V-8108 PRODUCT SURGE TANK  
V-8109 DEETHANIZER  
V-8110/8111 PRODUCT AMINE CONTACTORS  
V-8112/8113 PRODUCT TREATERS  
V-8114 HOT OIL SURGE TANK  
V-8115 REFRIGERANT ECONOMIZER  
V-8116 REFRIGERANT SURGE TANK  
V-8117 FUEL GAS SCRUBBER  
V-8118 DRAIN SUMP  
V-8119 FLASH TANK  
V-8120 AMINE STILL  
V-8121 AMINE STILL REFLUX ACCUMULATOR  
V-8122 AMINE DRAIN SUMP  
V-8123 AMINE STORAGE TANK  
V-8124 STARTING AIR VOLUME TANK  
V-8125 FLARE SEPARATOR  
V-8126 ENGINE/COMP. OIL STORAGE TANK  
V-8128 LOW TEMPERATURE DRAIN SEPARATOR  
V-8129 PRODUCT SUCTION SCRUBBER  
V-8131 REFRIGERANT SUCTION SCRUBBER

PKG-XXXX PURCHASED METER PACKAGE

**ABB Randall Corporation**

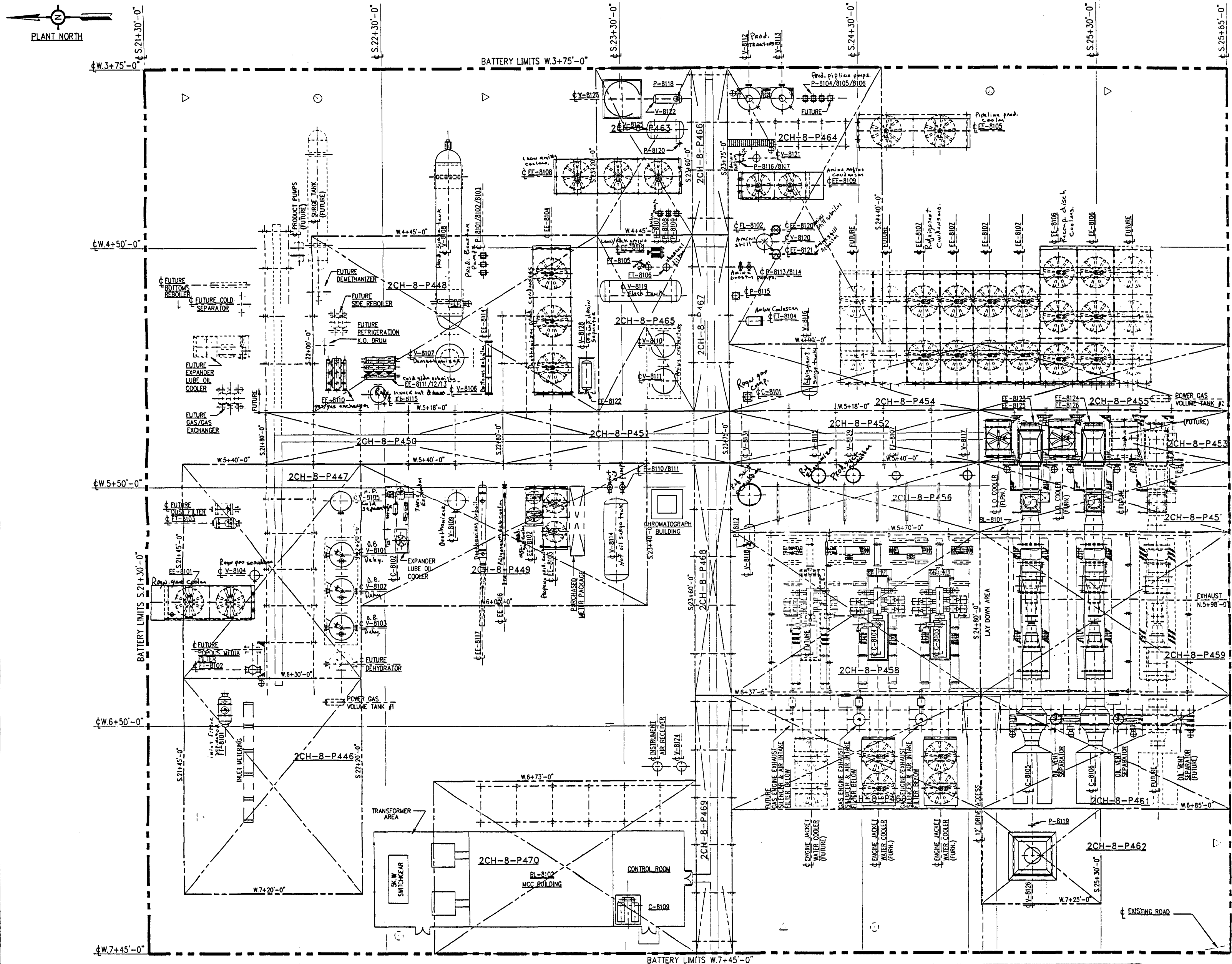
AN ABB LUMMUS CREST COMPANY  
Houston, Texas  
ABB JOB # 80152

**Ei Paso**  
NATURAL GAS COMPANY

CHACO CRYOGENIC PLANT  
PIPING DRAWING INDEX  
INSIDE BATTERY LIMITS

SCALE: 1"=20'-0"  
DWG. NO. 2CH-8-P444

01/20/95 at 10:11 by JBJ



▽ - FIREWATER MONITORS

⊗ - FIREWATER HYDRANTS

0 5 25 50

10

GRAPHIC SCALE IN FEET

DWG. NO.		TITLE		A. 1-3-95		ISSUED FOR APPROVAL		DESCRIPTION		W.O.		APP. PRI. SEP. DATE		TO		W.O.	
NO.		DATE		BY				REVISIONS									
R/W NUMBER																	
COMPUTER																	
SAVE NAME																	
2CH8P444																	
PRINT RECORD																	

**NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT**

**OIL CONSERVATION DIVISION**

2040 S. Pacheco  
Santa Fe, New Mexico 87505

October 13, 1995

**CERTIFIED MAIL**

**RETURN RECEIPT NO. Z-765-962-424**

Mr. Patrick Marquez  
Compliance Engineer  
El Paso Natural Gas Company  
P.O. Box 4990  
Farmington, New Mexico 87499

**RE: WATER QUALITY MONITORING AND PIT CLOSURE PLAN  
CHACO GAS PLANT, GW-71  
SAN JUAN COUNTY, NEW MEXICO**

Dear Mr. Marquez:

The New Mexico Oil Conservation Division (OCD) has reviewed El Paso Natural Gas Company's (EPNG) October 10, 1995 "ANNUAL REPORT OF MONITOR WELL ANALYSES, REQUEST APPROVAL OF WORK PLAN FOR CHACO INDUSTRIAL PONDS AND FLARE PIT". This document contains EPNG's request to decrease the frequency of monitoring the discharge and ground water quality at the Chaco Gas Plant. The document also contains EPNG's plan for investigation of the extent of contamination related to the former use of the unlined flare pit and industrial ponds #1 and #2.

Below is the OCD's review of this document:

- A. The OCD approves of the above referenced request to decrease the frequency of monitoring the discharge quality and ground water quality at the Chaco Gas Plant.

Please be advised that OCD approval does not relieve EPNG of liability should their operation result in actual pollution of surface water, ground water or the environment. In addition, OCD approval does not relieve EPNG of responsibility for compliance with any other federal, state and local laws and/or regulations.

Mr. Patrick Marquez  
October 13, 1995  
Page 2

- B. The OCD approves of the above referenced investigation work plan for determining the extent of contamination related to the former use of the unlined flare pit and industrial ponds #1 and #2 with the following conditions.
1. In addition to the sampling proposed, the soils in each pit/pond will be sampled for heavy metals.
  2. All wastes generated during the investigation will be disposed of at an OCD approved facility.
  3. EPNG will submit the remediation/closure report to the OCD by December 15, 1995. The report will contain:
    - a. A description of all activities which occurred during the investigation, conclusions and recommendations.
    - b. A summary of laboratory analytic results of all soil and water quality sampling of the borings and monitor wells.
    - c. A water table elevation map using the water table elevation of the ground water in all monitor wells at the facility.
    - d. A geologic log for each boring and monitor well and an as built well completion diagram for each monitor well.
  4. EPNG will notify the OCD at least one week in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples.
  5. All documents submitted for approval will be submitted to the OCD Santa Fe Office with copies provided to the OCD Aztec District Office.

Please be advised that OCD approval does not relieve EPNG of liability if the investigation fails to define the extent of contamination related to EPNG's activities. In addition, OCD approval does not relieve EPNG of responsibility for compliance with any other federal, state and local laws and/or regulations.

If you have any questions, please contact me at (505) 827-7154.

Sincerely,



William C. Olson  
Hydrogeologist  
Environmental Bureau

xc: OCD Aztec District Office

Z 765 962 424



**Receipt for  
Certified Mail**

No Insurance Coverage Provided  
Do not use for International Mail  
(See Reverse)

PS Form 3800, March 1993

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

Fold at line over top of envelope to the  
right of the return address

**FAX**  
TRANSMITTAL

**EL PASO NATURAL GAS COMPANY**

is a major open-access transporter of natural gas serving West Texas, New Mexico, Arizona, southern Nevada and California. California receives more than half of its gas from El Paso's 17,500-mile pipeline system, which is connected to every major producing basin in the Southwest. El Paso's customer-friendly electronic bulletin board, *Passport*, offers state-of-the-art programs beneficial to producers, buyers, marketers, end-users and other pipelines.

TO	NAME OF RECIPIENT	Bill Olson	PAGE(S) TRANSMITTED	St. Cover	DATE	
	NAME OF COMPANY	Amoco			CITY/STATE	
	ADDRESS				TELEPHONE NUMBER	
	FAX NUMBER (REQUIRED)	505 827 8177				
FROM	NAME OF SENDER	Patrick Marguez	NAME OF COMPANY	<input checked="" type="checkbox"/> EL PASO NATURAL GAS <input type="checkbox"/> OTHER	CITY/STATE	
	ADDRESS					
REMARKS	<input type="checkbox"/> RETURN <input type="checkbox"/> NO RETURN			REPLY	FAX NUMBER	( )
	Complete report in report sections Wilson				VERIFY NUMBER:	( )

FM-SS-0162 (Rev. 10-92)

Bill - I hope that I've captured your requests from our meeting last week. If there is something else you would like to see in the work plan - please call @ your earliest convenience. work. will probably begin on or about Thursday, Oct 12<sup>th</sup>. Thanks Patrick Marguez

505 5992175

— Hard Copy to follow —

**El Paso**  
Natural Gas Company

P. O. BOX 333  
FARMINGTON, NEW MEXICO 87499

Mr. Bill Olson  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504

October 10, 1995

**Subjects:      Annual Report of Monitor Well Analyses  
Request Approval of Work Plan for Chaco Industrial Ponds and Flare Pit**

Dear Mr. Olson:

El Paso Natural Gas Company submits The Annual Monitor Well Analyses Report and request approval for: 1) Reduced analyte and sampling frequency and 2) Approval of EPNG's Work Plan for closing Industrial Ponds 1 & 2 and The Earthen Flare Pit.

### **Analyses Report**

#### **1.0 Monitor Wells and Discharges**

Analyses for the monitor wells, the non-contact discharge line and the contact water at Chaco Plant are presented under Tab A. This report is required as a condition of the Discharge Plan approval dated September 13, 1994. The discharges were sampled and analyzed as follows:

<u>Discharge</u>	<u>Frequency</u>	<u>Constituents</u>
Monitor Wells	Quarterly	WQCC metals, major anions/cations and TDS
Non-Contact	Initially	BTEX, WQCC metals, organics, major anions/cations and TDS
	Quarterly	WQCC metals, major anions/cations and TDS
Contact	Annually	WQCC 3-103A constituents save the radioactive species

Based on the information provided, EPNG request that the sampling frequency and analyses be reduced as follows:

<u>Discharge</u>	<u>Frequency</u>	<u>Constituents</u>
Monitor Wells	Annually	WQCC metals, major anions/cations and TDS
Non-Contact	Annually	WQCC metals, major anions/cations and TDS
Contact	None	N/A

## Work Plan

### 2.0 Chaco Flare Pit and Industrial Ponds 1 & 2

As a condition for approval of Chaco's Discharge Plan (William Lemay to Kris Sinclair - September 13, 1994) EPNG is required to submit a closure plan for industrial ponds 1 & 2 and the earthen flare pit. The Closure Plan will be submitted with the results of this Work Plan. A map of the pits is provided under Tab B.

### 2.1 Current Monitoring

EPNG has installed and continues to sample seven monitor wells at key locations within the Plant boundaries. EPNG has also installed two lined ponds which receive all contact water generated at the Plant and maintains unlined ponds 3, 4, 5, 6 and 8 for non-contact water consistent with NMOC's directive.

### 2.2 Area Assessment/Sampling

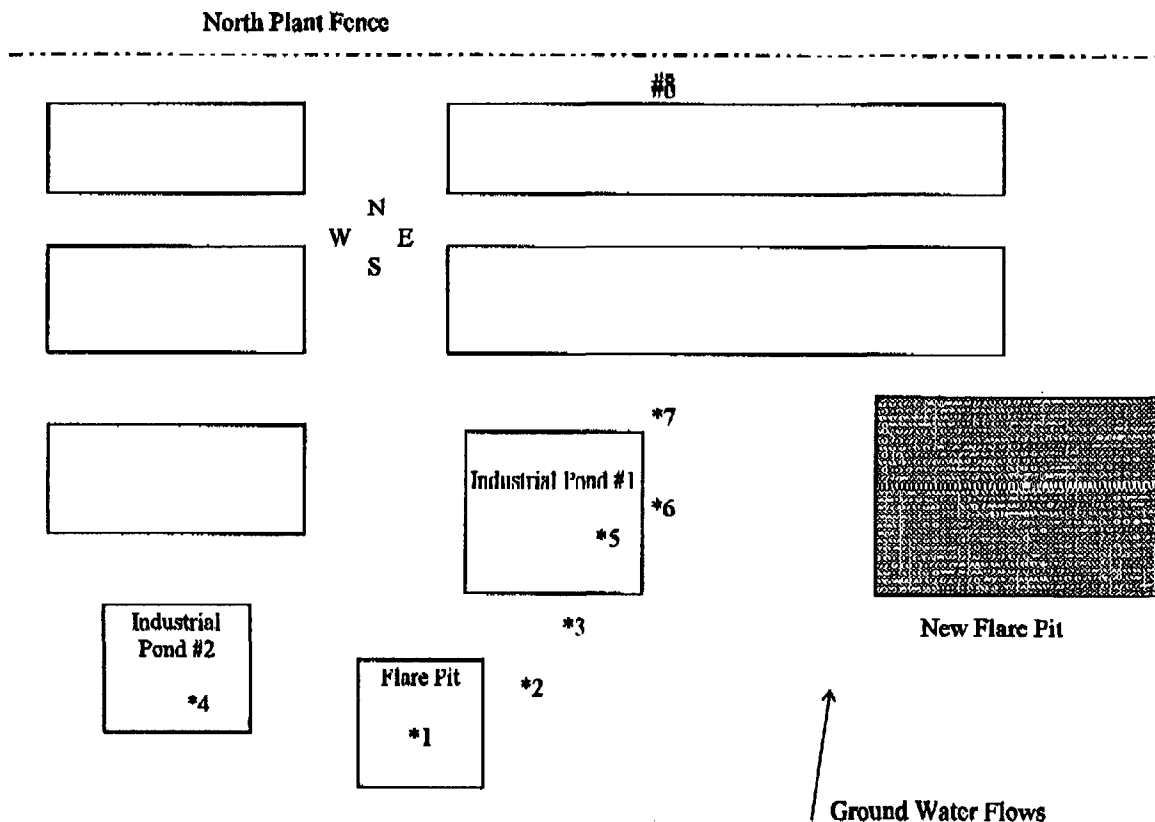
Seven locations are proposed to determine the vertical extent of contamination in the area of the pits. Three locations will be within the pit boundaries while the remaining locations will be down gradient of the pits (Refer to Figure 1). Sampling will take place as follows:

- One soil sample within the pit boundaries at approximately 3-5 feet beneath the surface. This sample will serve as "source" sample and will be analyzed for BTEX and TPH (EPA methods 8020 and modified 8015 and/or 418.1). One flare pit and two waste water pits give six analyses.
- Locations 1-7 will be drilled to the depth of contamination (PID < 100ppm) with PID readings taken at 5 foot increments. A TPH analysis will be run on the sample that shows the highest PID reading per location. Seven locations give seven TPH analyses at highest PID reading.
- One soil sample will be taken at the depth of contamination and analyzed for BTEX and TPH. Seven locations give fourteen analyses.
- Once the samples are retrieved, each location will be filled with cement-bentonite grout to prevent cross contamination.

In addition, EPNG proposed to drill one monitor well north (down gradient) of the ponds to further establish that no hydrocarbon constituents are moving off-site. Details for the installation and sampling are as follows:

- The well will be completed to first ground water, anticipated depth - less than 30'.
- An installation diagram and specifications are provided under Tab B.
- The monitor well will be sampled initially for BTEX by EPA Method 8020, WQCC Metals by EPA Method 6010, Cations/Anions and Polynuclear Aromatics.



**Figure 1**

Sample (Bore) Locations (\*#)

Monitor Well Location - #8

Indicates those locations which will be sampled to the depth of contamination (PID @ 5 foot increments).  
Monitor well installation to perched aquifer

### 2.3 Pit/Pond Closure

Upon receipt of the analyses outlined above, EPNG will submit a plan for remediation/closure to your office.

EPNG respectfully request approval of the Work Plan and the reduced sampling frequency and analytes for the existing monitor wells. Please do not hesitate to call if you need more information at 505-599-2175.

Thank you,

Patrick J. Marquez  
Compliance Engineer

xc: w/o attachments

Denny Foust - NMOCD Aztec  
Sandra Miller/ David Bays/File 5212 Regulatory

**FAX**  
TRANSMITTAL**EL PASO NATURAL GAS COMPANY**

is a major open-access transporter of natural gas serving West Texas, New Mexico, Arizona, southern Nevada and California. California receives more than half of its gas from El Paso's 17,500-mile pipeline system, which is connected to every major producing basin in the Southwest. El Paso's customer-friendly electronic bulletin board, Passport, offers state-of-the-art programs beneficial to producers, buyers marketers, end-users and other pipelines.

<b>TO</b>	NAME OF RECIPIENT	Bill Olson	PAGE(S) TRANSMITTED	3 + Cover	DATE	10/13/95
	NAME OF COMPANY				CITY/STATE	
	ADDRESS				TELEPHONE NUMBER	
	FAX NUMBER (REQUIRED)	505 827 8177				
<b>FROM</b>	NAME OF SENDER	Patrick M. Mearns	NAME OF COMPANY		<input type="checkbox"/> EL PASO NATURAL GAS <input type="checkbox"/> OTHER	
	ADDRESS				CITY/STATE	
<b>REMARKS</b>	<input type="checkbox"/> RETURN <input type="checkbox"/> DO NOT RETURN		<b>REPLY</b>	FAX NUMBER:		
				(      ) _____		
				VERIFY NUMBER:		
				(      ) _____		

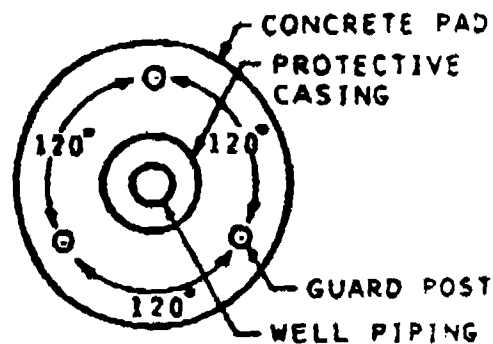
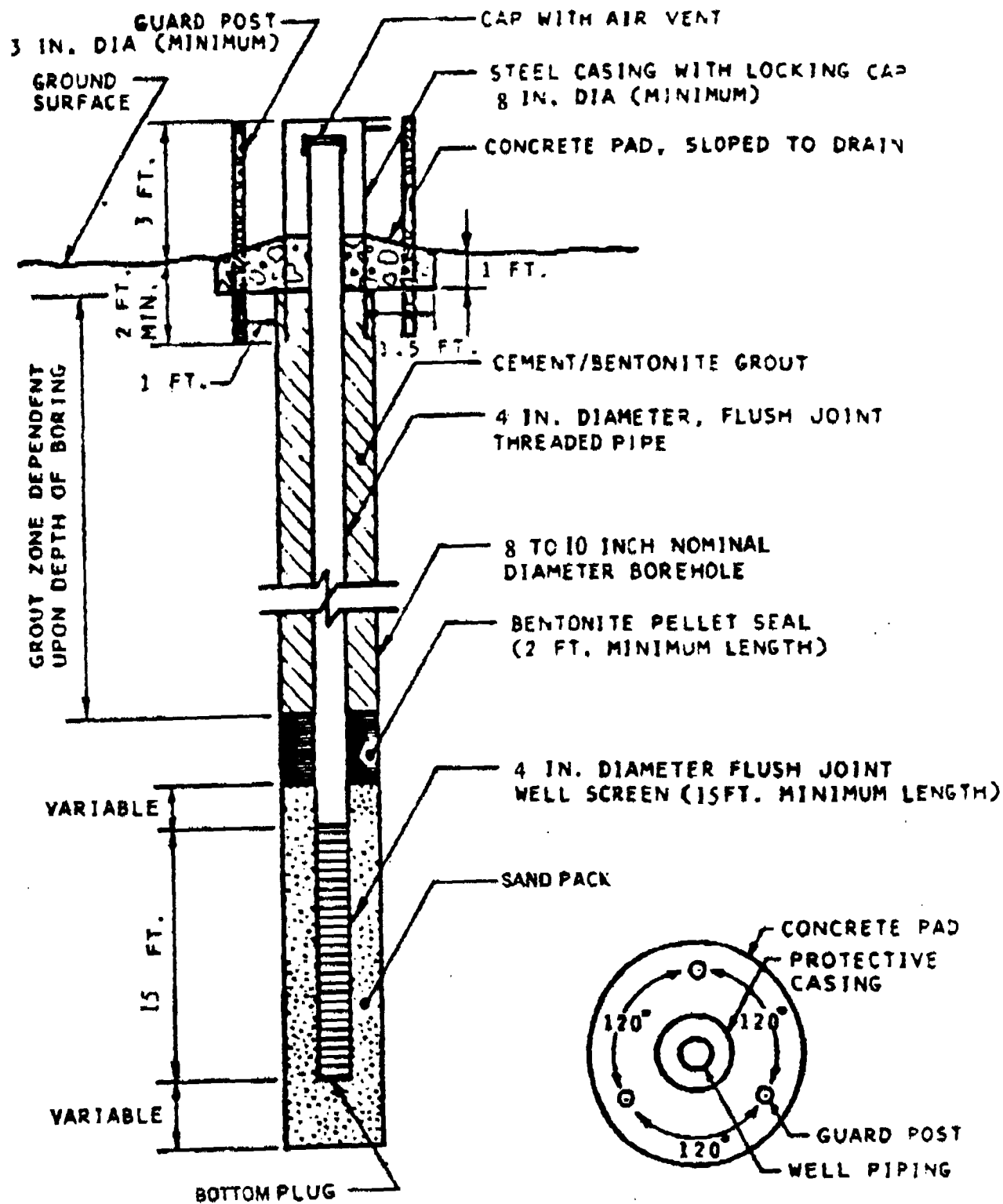
Bill -

1. Cams are using a minimum of 5% Bentonite grout
2. My Fax is 599 ~~2119~~ 2119
3. Specifications for transfer well are attached.

### MONITORING WELL INSTALLATION SPECIFICATIONS

1. The well is to be completed to first ground water, anticipated depth less than 30'.
2. Well casing will be constructed of 4" schedule 40 PVC piping.
3. The well will be screened using .010" slotted PVC piping. The screen will be placed with at least 5' of screen above and 10' below the water level using a minimum of 15' of screen.
4. A gravel pack consisting of silica sand consistent with screen and site lithologies, a 2' bentonite seal, and cement-bentonite grout to surface.
5. Monitor well top will extend above ground surface, but not less than 2'. The well is to have a concrete pad , equipped with a locking cover and bumper posts.

## TYPICAL MONITORING WELL INSTALLATION

GUARD POST PLAN

**NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT**

**OIL CONSERVATION DIVISION**

**2040 S. Pacheco  
Santa Fe, New Mexico 87505**

September 22, 1995

**CERTIFIED MAIL**

**RETURN RECEIPT NO. P-176-012-192**

Mr. Patrick Marquez  
El Paso Natural Gas Company  
P.O. Box 4990  
Farmington, New Mexico 87499

**Re: Spent Sand Blast Material Disposal  
Chaco Gas Plant  
San Juan County, New Mexico**

Dear Mr. Marquez:

The New Mexico Oil Conservation Division (OCD) has received El Paso Natural Gas Company's (EPNG) request dated September 21, 1995 to dispose of 24,000 pounds of sand blast media along with the analytical results characterizing the waste.

Based upon the information provided the request is hereby approved subject to the following conditions:

1. The sand blast waste will be spread onto the gravel roads within the facility proper only.
2. The sand blast waste will not be allowed to enter any water course.

Please be advised this approval does not relieve EPNG of liability should their operation result in pollution of surface water, ground water or the environment. In addition, OCD approval does not relieve EPNG of responsibility for compliance with other federal, state and/or local regulations.

If you have any questions call me at (505) 827-7153.

Sincerely,



Chris Eustice  
Geologist

**El Paso**  
Natural Gas Company

RECEIVED  
OIL CONSERVATION DIVISION

SEP 21 1995 8 52

P. O. BOX 4990  
FARMINGTON, NEW MEXICO 87499

September 21, 1995

Mr. Chris Eustice  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504

**Subject: Paint Chip Disposal - Chaco Plant**

Mr. Eustice,

EPNG's Chaco Plant has generated approximately 60 bbls (24000± lbs) of sand blast media while re-coating plant piping during the month of July. The waste was sampled and analyzed for lead and chrome - analysis is attached for your review. EPNG request permission to use the blast media as road base within the Plant boundaries. No blast media will leave the Chaco Plant boundaries.

Should you require further information, please call at 505 599 2175.

Thank you,

  
Patrick Marquez  
Compliance Engineer

cc: w/o attachments

Denny Foust (NMOCD)  
Lendel Smith (EPNG)  
Bob Yungert (EPNG)  
Greg Hale (EPNG)  
Sandra Miller/David Bays/File: 5212 Regulatory



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

ATI I.D. 507419

August 15, 1995

El Paso Natural Gas Co.  
P.O. Box 4990  
Farmington, NM 87499

Project Name/Number: (NONE)

Attention: John Lambdin

On 07/31/95, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** sample(s). The sample(s) were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

All analyses were performed by Analytical Technologies, Inc., 11 East Olive Road, Pensacola, FL.

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

D. McGill

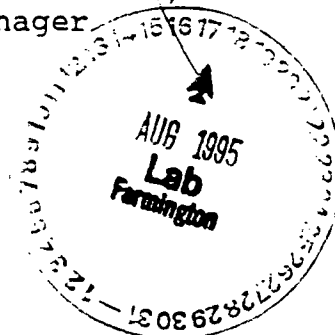
Kimberly D. McNeill  
Project Manager

MR:jt

Enclosure

A. Mitchell-Jones

H. Mitchell Rubenstein, Ph.D.  
Laboratory Manager





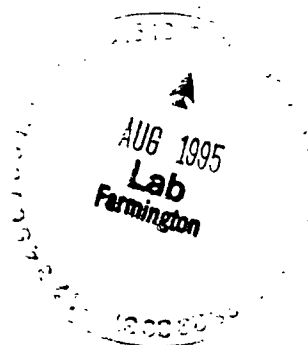


Analytical **Technologies**, Inc.

CLIENT : EL PASO NATURAL GAS CO. DATE RECEIVED : 07/31/95  
PROJECT # : (NONE)  
PROJECT NAME : (NONE) REPORT DATE : 08/15/95

ATI ID: 507419

	ATI PENSACOLA ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	507419-01	950805	NON-AQ	07/26/95



---TOTALS---

<u>MATRIX</u>	<u>#SAMPLES</u>
NON-AQ	1

ATI STANDARD DISPOSAL PRACTICE

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



Analytical Technologies, Inc.

"Method Report Summary"

Accession Number: 508059  
Client: ANALYTICAL TECHNOLOGIES, INC.  
Project Number: 507419  
Project Name: EL PASO NATURAL GAS  
Project Location: N/S  
Test: Group of Single Metals

Client Sample Id:	Parameter:	Unit:	Result:
507419-01	CHROMIUM, TCLP (6010)	MG/L	0.17
	LEAD, TCLP (6010)	MG/L	0.53

950805

Chaco Plant

'C' Turbine Spent

Abrasive blast Media



Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 508059  
Client: ANALYTICAL TECHNOLOGIES, INC.  
Project Number: 507419  
Project Name: EL PASO NATURAL GAS  
Project Location: N/S  
Test: Group of Single Metals  
Matrix: NON-AQUEOUS LEACHATE  
QC Level: II

Lab Id: 001  
Client Sample Id: 507419-01

Sample Date/Time: 26-JUL-95 1330  
Received Date: 01-AUG-95

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
CHROMIUM, TCLP (6010)	MG/L	0.17	0.01		H6T070	JR
LEAD, TCLP (6010)	MG/L	0.53	0.05		H6T070	JR

Comments:



Analytical Technologies, Inc.

"Metals Quality Control Report"

Parameter:	CHROMIUM	LEAD
Batch Id:	H6T070	P6T070
Blank Result:	<0.01	<0.05
Anal. Method:	6010	6010
Prep. Method:	3010	3010
Analysis Date:	09-AUG-95	09-AUG-95
Prep. Date:	09-AUG-95	09-AUG-95

Sample Duplication

Sample Dup:	508059-1	508059-1
Rept Limit:	<0.01	<0.05
Sample Result:	2.2	2.5
Dup Result:	2.2	2.5
Sample RPD:	0	0
Max RPD:	20	20
Dry Weight%	N/A	N/A

Matrix Spike

Sample Spiked:	508059-1	508059-1
Rept Limit:	<0.01	<0.05
Sample Result:	0.17	0.53
Spiked Result:	2.2	2.5
Spike Added:	2.0	2.0
% Recovery:	102	99
% Rec Limits:	75-125	75-125
Dry Weight%	N/A	N/A

ICV

ICV Result:	5.0	5.0
True Result:	5.0	5.0
% Recovery:	100	100
% Rec Limits:	90-110	90-110

LCS

LCS Result:	2.2	2.1
True Result:	2.0	2.0
% Recovery:	110	105
% Rec Limits:	90-120	90-120

8/17/95



Analytical **Technologies**, Inc.

"Quality Control Comments"

Batch Id:

Comments:

---

H6T070	ANALYST: JR
H6T070	The results reported under "Sample Duplication" are the MS/MSD.
P6T070	ANALYST: JR
P6T070	The results reported under "Sample Duplication" are the MS/MSD.



N/A = NOT APPLICABLE.  
N/S = NOT SUBMITTED.  
N/C = SAMPLE AND DUPLICATE RESULTS ARE AT OR BELOW ATI REPORTING LIMIT;  
THEREFORE, THE RPD IS "NOT CALCULABLE" AND NO CONTROL LIMITS APPLY.  
N/D = NOT DETECTED.  
DISS. OR D = DISSOLVED  
T & D = TOTAL AND DISSOLVED  
R = REACTIVE  
T = TOTAL  
G = SAMPLE AND/OR DUPLICATE RESULT IS BELOW 5 X ATI REPORTING LIMIT AND  
THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE RESULT IS AT  
OR BELOW ATI REPORTING LIMIT; THEREFORE, THE RESULTS ARE "IN CONTROL".  
Q = THE ANALYTICAL (POST-DIGESTION) SPIKE IS REPORTED DUE TO PERCENT RECOVERY  
BEING OUTSIDE ACCEPTANCE LIMITS ON THE MATRIX (PRE-DIGESTION) SPIKE.  
# = ELEVATED REPORTING LIMIT DUE TO INSUFFICIENT SAMPLE.  
+ = ELEVATED REPORTING LIMIT DUE TO DILUTION INTO CALIBRATION RANGE.  
\* = ELEVATED REPORTING LIMIT DUE TO MATRIX INTERFERENCE. (DILUTION PRIOR  
TO ANALYSIS  
@ = ADJUSTED REPORTING LIMIT DUE TO SAMPLE MATRIX. (DILUTION PRIOR TO  
DIGESTION)  
P = ANALYTICAL (POST DIGESTION) SPIKE.  
I = DUPLICATE INJECTION.  
& = AUTOMATED  
F = SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.  
N/C+ = NOT CALCULABLE  
N/C\* = NOT CALCULABLE; SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.  
H = SAMPLE AND/OR DUPLICATE RESULT IS BELOW 5 X ATI REPORTING LIMIT AND THE  
ABSOLUTE DIFFERENCE BETWEEN THE RESULTS EXCEEDS THE ATI REPORTING  
LIMIT; THEREFORE, THE RESULTS ARE "OUT OF CONTROL".  
A = SAMPLE AND DUPLICATE RESULTS ARE "OUT OF CONTROL".  
Z = THE SAMPLE RESULT FOR THE SPIKE IS BELOW THE REPORTING LIMIT. HOWEVER,  
THIS RESULT IS REPORTED FOR ACCURATE QC CALCULATIONS.  
NH= SAMPLE AND OR DUPLICATE RESULT IS BELOW 5 X ATI REPORTING LIMIT  
AND THE ABSOLUTE DIFFERENCE BETWEEN THE RESULTS EXCEEDS THE ATI  
REPORTING LIMIT; THEREFORE, THE RESULTS ARE "OUT OF CONTROL".  
SAMPLE IS NON-HOMOGENEOUS.  
J = (FLORIDA DEP 'J' FLAG) - MATRIX SPIKE AND POST SPIKE RECOVERY IS OUT OF  
THE ACCEPTABLE RANGE. SEE OUT OF CONTROL EVENTS FORM.  
S = METHOD OF STANDARD ADDITIONS (MSA) WAS PERFORMED ON THIS SAMPLE.

FROM ANALYSIS REPORT:  
RL= REPORTING LIMIT BASED ON METHOD DETECTION LIMIT STUDIES.  
Q= QUALIFIER (FOOTNOTE)

FROM QUALITY CONTROL REPORT:  
RPD= RELATIVE PERCENT DEVIATION.  
RPT LIMIT= REPORTING LIMIT BASED ON METHOD DETECTION LIMIT STUDIES.

NOTE: THE UNITS REPORTED ON THE QUALITY CONTROL REPORT ARE REPORTED ON AN AS  
RUN BASIS.

SW-846, 3rd Edition, September 1986 and Revision 1, July 1992.  
EPA 600/4-79-020, Revised March 1983.  
NIOSH Manual of Analytical Methods, 3rd Edition.

GJ = GARY JACQUES  
JLH = JAMES L. HERED

JR = JOHN REED  
JMP = JACQUELINE M. PRICE

CHAIN OF CUSTODY

DATE: 7/26/95 PAGE 1 OF 1

AT LAB I.D. 507419

PROJECT MANAGER:

ANALYSIS REQUEST

COMPANY: El Paso Natural Gas Company  
ADDRESS: 770 West Alamo  
TAMU, AM 77401  
PHONE: 505-599-2144  
FAX: 505-599-2166

BILL TO: John Landrum  
COMPANY: El Paso Natural Gas Company  
ADDRESS: P.O. Box 4990  
TAMU, AM 77499

SAMPLE ID DATE TIME MATRIX LAB ID

950805 7/26/95 13:30 Solid -01

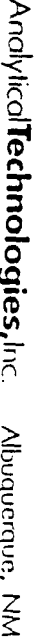
Petroleum Hydrocarbons (418.1)	
(MOD 8015) Gas/Diesel	
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	
BTXE/MTBE (8020)	
Chlorinated Hydrocarbons (601/8010)	
Aromatic Hydrocarbons (602/8020)	
SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	
Pesticides/PCB (608/8080)	
Herbicides (615/8150)	
Base/Neutral/Acid Compounds GC/MS (625/8270)	
Volatile Organics GC/MS (624/8240)	
Polynuclear Aromatics (610/8310)	
SDWA Primary Standards - Arizona	
SDWA Secondary Standards - Arizona	
SDWA Primary Standards - Federal	
SDWA Secondary Standards - Federal	
LEAD by TCLP	
CHROMIUM B. by TCLP	
The 13 Priority Pollutant Metals	
RCRA Metals by Total Digestion	
RCRA Metals by TCLP (1311)	

PROJECT INFORMATION SAMPLE RECEIPT

PROJ. NO.: NO. CONTAINERS: 1  
PROJ. NAME: CUSTODY SEALS: (Y) / N / NA  
P.O. NO.: RECEIVED INTACT: Y  
SHIPPED VIA: RECEIVED COLD: N 25.6°C  
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS  
(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK  
Comments:

SAMPLED & RELINQUISHED BY: 1. RELINQUISHED BY: 2. RELINQUISHED BY: 3.

Signature: Time: 11:30  
Printed Name: Date: 7/26/95  
Company: Phone: 505-599-2152  
RECEIVED BY: 1. RECEIVED BY: 2. RECEIVED BY: (LAB)  
Signature: Time: Signature: Time: Signature: Time:  
Printed Name: Date: Printed Name: Date: Printed Name: Date:  
Company: Company: Company:



DATE 7/31 PAGE 1 OF 1

ANALYSIS REQUEST

**CLIENT PROJECT MANAGER:**

kim mcneill

[illegible]


PROJECT INFORMATION		SAMPLE RECEIPT	
PROJECT NUMBER:	507419	TOTAL NUMBER OF CONTAINERS	1
PROJECT NAME:	Q Rev Mgt. Cgs	CHAIN OF CUSTODY SEALS	X
QC LEVEL:	(STD) IV	INTACT?	X
QC REQUIRED:	MS MSD BLANK	RECEIVED GOOD COND./COLD	X
TAT: (STANDARD)	RUSH	LAB NUMBER	508059
DUE DATE:	8/14		
RUSH SURCHARGE:	N/A		
CLIENT DISCOUNT:	15 %		
		IWO # = KM 658	
SAMPLES SENT TO		SIGNATURE	
FL COLLINS		X	
BENTON		PENSACOLA	
PORTH AND		PRICE NIX	
		TOTAL INVOICE	
RELINQUISHED BY: 1.		Signature: Time: 1:50 P	
Printed Name: Andrew Peter		Date: 7/31	
Analytical Technologies, Inc.		Allbuquerque	
RECEIVED BY: (LAB) 1.		Signature: Time: 09:51	
Printed Name: R. L. SHERMAN		Date: 8/1/85	
Company: ATT-TEL			
RELINQUISHED BY: 2.		Signature: Time:	
Printed Name:		Date:	
Company:			
RECEIVED BY: (LAB) 2.		Signature: Time:	
Printed Name:		Date:	
Company:			



**SAN JUAN COUNTY**  
**PUBLIC WORKS DEPARTMENT**  
**MEMORANDUM**

TO: All Supervisors

DATE: August 15, 1995

FROM: Dave Keck   
Assistant Public Work Director

SUBJECT: Water From Chaco Plant

---

Arrangements have been made to obtain water from the El Paso National Gas's Chaco Plant under the following conditions:

1. San Juan County will notify the Chaco Plant Superintendent 24 hours in advance. Contact Lyndell Smith, Max Blackwood or Paul Cantana at 325-8720.
2. Water will not be discharged in any water way, i.e. river or lake.
3. Water will be used for road maintenance only.

If you have any questions, please advise.

ks











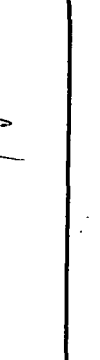


8/23/95 WT-82 Lincoln Forks

## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

# Chaco Plant Non-Contact Waste Water Acceptance Log

Date	Company	Amount (Barrels)	Intended Use	Final Disposition of Water	Signature
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	
8/24/95	SAN JUAN COUNTY ROAD DEPT.	3500 GALLONS	WATER CR. 7100	CR. 7100	

## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

# Chaco Plant Non-Contact Waste Water Acceptance Log

Date	Company	Amount (Barrels)	Intended Use	Final Disposition of Water	Signature
Sept. 13 1995	San Juan County Road Dept.	3500 Gallons	Intended to use it on County Road, (CR) To Put it on Road.	Water Road CR 7100	Daron Wallits
"	"	"	"	"	Daron Wallits
"	"	"	"	"	Daron Wallits
"	"	"	"	"	Daron Wallits
Sept. 13 1995	San Juan County Road Dept.	3500 Gallons	To Put on Road, County Road.	Water County Road 7100	Daron Wallits
"	"	"	"	"	Daron Wallits
"	"	"	"	"	Daron Wallits
"	"	"	"	"	Daron Wallits
Sept. 13 1995	San Juan County Road Dept.	3500 Gallon	To Put on Road, County Road.	Water Road CR 7100	Daron Wallits
"	"	"	"	"	Daron Wallits
"	"	"	"	"	Daron Wallits
"	"	"	"	"	Daron Wallits

[illegible]





## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

# Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

[illegible]

## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

# Chaco Plant Non-Contact Waste Water Acceptance Log

Date	Company	Amount (Barrels)	Intended Use	Final Disposition of Water	Signature
9-20-75	Sigco			AP 7100	[Signature]
					[Signature]
"	"	"	"	"	[Signature]
"					[Signature]
"	"	"	"	"	[Signature]
"	"	"	"	"	[Signature]
"	"	"	"	"	[Signature]
					[Signature]



[illegible]





[illegible]

## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]



San Carlos  
Sociedad

Dear Jan Carter.



# Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

Frank Clearing - 3/12/96 <sup>Hy 384-C-170</sup>

Received  
Verbal Approval

Ver. #	Date	Description	Amount
	3/12/96	for Sam Sam Country's use for wk of 3/12/96.	

## Chaco Plant Non-Contact Waste Water Acceptance Log

[illegible]

[illegible]





[illegible]



NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. Pacheco  
Santa Fe, New Mexico 87505

August 10, 1995

CERTIFIED MAIL

RETURN RECEIPT NO. Z-765-962-389

Mr. Patrick Marquez  
Compliance Engineer  
El Paso Natural Gas Company  
P.O. Box 4990  
Farmington, New Mexico 87499

RE: SOLID WASTE PIT CLOSURES  
ANGEL PEAK COMPRESSOR STATION AND CHACO GAS PLANT  
SAN JUAN COUNTY, NEW MEXICO

Dear Mr. Marquez:

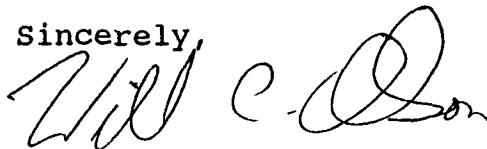
The New Mexico Oil Conservation Division (OCD) has reviewed El Paso Natural Gas Company's (EPNG) June 5, 1995 "ANGEL PEAK AND CHACO PLANT SOLID WASTE PIT CLOSURE SAMPLING" and April 10, 1995 "SOLID WASTE PIT CLOSURES AT EPNG'S ANGEL PEAK AND CHACO FACILITIES". These documents contain the results of EPNG's waste characterization of soils in the former solid waste pits at EPNG's Angel Peak Compressor Station and Chaco Gas Plant. The documents also request permission to close the pits pursuant to EPNG's September 12, 1995 closure plan.

The OCD approves of EPNG's request to close the pits pursuant to EPNG's September 12, 1995 closure plan.

Please be advised that OCD approval does not relieve EPNG of liability if, the pits pose a future threat to ground water, surface water, public health or the environment. In addition, OCD approval does not relieve EPNG of responsibility for compliance with any other federal, state and local laws and/or regulations.

If you have any questions, please contact me at (505) 827-7154.

Sincerely,



William C. Olson  
Hydrogeologist  
Environmental Bureau

xc: OCD Aztec District Office

**El Paso**  
Natural Gas Company

NEW MEXICO OIL CONSERVATION DIVISION  
RECEIVED

APR 11 2 10 52

P. O. BOX 4990  
FARMINGTON, NEW MEXICO 87499

April 10, 1995

Mr. Bill Olson  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504

Re: Solid Waste Pit Closures at EPNG's Angel Peak and Chaco facilities

Dear Mr. Olson:

Enclosed are the analyses for the subject solid waste pits. As per the November 22, 1995 NMOCD approval letter for closure, EPNG is required to submit the analytical results prior to the actual closure of the pits and will notify OCD of all activities 72 hours in advance such that OCD has the opportunity to witness the events.

Please review the enclosed analyses and respond to me at 505-599-2175 at your earliest convenience.

Thank you,

*P. S. Marquez*  
Patrick Marquez  
Compliance Engineer

cc:

Denny Foust (NMOCD)

w/o enclosures

Ron Jones (EPNG)  
David Hall (EPNG) *DM*  
Sandra Miller (EPNG) *EDB/ZDC*  
Lyndell Smith (EPNG)  
File: 5212 Regulatory

Bill,

Method 8010 as requested.

This is in addition to the  
analysis sent to you on  
April 10<sup>th</sup>.

Please call when you  
receive.

Thank you.

*Patrick Marquez*  
599 2175

# MEMORANDUM

**To:** John Lambdin

**Date:** June 05, 1995

**From:** Norman R. Norvelle

**Place:** Field Services Engineering Lab

**Subject:** Angel Peak and Chaco Plant Solid Waste Pit Closure Sampling

On June 01, 1995 I re-sampled Angel Peak and Chaco Plant solid waste pits for final closure. I sampled two points at the bottom of each pit at a depth of one foot and then composite the two samples from each pit at the time of sampling. These were put into a 8 Oz. jar. The following analysis was requested: EPA method 8010 for TCLP organics. This was additional sampling requested by NMOCD.

The sample was iced in a cooler until received in the lab and then stored in the sample refrigerator. Today, the sample was packed in bubble wrap, iced and ship in a cooler to the BEI labs in Seattle. A temperature blank was included. The ancillary paper work is attached.

<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>
950654	6-1-95	1:15 PM	Chaco Plant Dump
950655	6-1-95	2:20 PM	Angel Peak Dump

Should you have any questions or comments, please give me a call.

  
Norman R. Norvelle, Senior Division Chemist

attachments

cc: David Hall

Patrick Marquez

Results Attached 7/13/95 J. Parker

# SOUND ANALYTICAL SERVICES, INC.

Client Name

Philip Environmental Laboratory

Client ID:

950654 95-A9715

Lab ID:

49278-01

Date Received:

6/7/95

Date Prepared:

6/20/95

Date Analyzed:

6/21/95

% Solids

Chaco Plant  
Dump Pit

## TCLP Halogenated Hydrocarbons by USEPA Method 8010

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Bromochloromethane	107		50	150
2-Bromo-1-chloropropane	64		50	150
1,4-Dichlorobutane	81		50	150

Analyte	Result (mg/L)	PQL	Flags
Vinyl Chloride	ND	0.001	
1,1-Dichloroethene	ND	0.001	
Methylene Chloride	0.081	0.001	
trans-1,2-Dichloroethene	ND	0.001	
1,1-Dichloroethane	ND	0.001	
Chloroform	ND	0.001	
1,1,1-Trichloroethane	ND	0.001	
Carbon Tetrachloride	ND	0.001	
1,2-Dichloroethane	ND	0.001	
Trichloroethene	ND	0.001	
1,2-Dichloropropane	ND	0.001	
Bromodichloromethane	ND	0.001	
cis-1,3-Dichloropropene	ND	0.001	
trans-1,3-dichloropropene	ND	0.001	
1,1,2-Trichloroethane	ND	0.001	
Tetrachloroethene	ND	0.001	
Chlorodibromomethane	ND	0.001	
Chlorobenzene	ND	0.001	
Bromoform	ND	0.001	
1,1,2,2-Tetrachloroethane	ND	0.001	
1,3-Dichlorobenzene	ND	0.001	
1,4-Dichlorobenzene	ND	0.001	
1,2-Dichlorobenzene	ND	0.001	

# SOUND ANALYTICAL SERVICES, INC.

Client Name  
Client ID:  
Lab ID:  
Date Received:  
Date Prepared:  
Date Analyzed:  
% Solids

Philip Environmental Laboratory  
950855 95-A9718  
49276-02  
6/7/95  
6/20/95  
6/21/95

Angel Peak  
Plant Dump  
Pit

## TCLP Halogenated Hydrocarbons by USEPA Method 8010

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Bromochloromethane	103		50	150
2-Bromo-1-chloropropane	70		50	150
1,4-Dichlorobutane	73		50	150

Analyte	Result (mg/L)	PQL	Flags
Vinyl Chloride	ND	0.001	
1,1-Dichloroethene	ND	0.001	
Methylene Chloride	0.088	0.001	
trans-1,2-Dichloroethene	ND	0.001	
1,1-Dichloroethane	ND	0.001	
Chloroform	ND	0.001	
1,1,1-Trichloroethane	ND	0.001	
Carbon Tetrachloride	ND	0.001	
1,2-Dichloroethane	ND	0.001	
Trichloroethane	ND	0.001	
1,2-Dichloropropane	ND	0.001	
Bromodichloromethane	ND	0.001	
cis-1,3-Dichloropropene	ND	0.001	
trans-1,3-dichloropropene	ND	0.001	
1,1,2-Trichloroethane	ND	0.001	
Tetrachloroethene	ND	0.001	
Chlorodibromomethane	ND	0.001	
Chlorobenzene	ND	0.001	
Bromoform	ND	0.001	
1,1,2,2-Tetrachloroethane	ND	0.001	
1,3-Dichlorobenzene	ND	0.001	
1,4-Dichlorobenzene	ND	0.001	
1,2-Dichlorobenzene	ND	0.001	



# SOUND ANALYTICAL SERVICES, INC.

Lab ID:  
Date Received:  
Date Prepared:  
Date Analyzed:  
% Solids

Method Blank - B162095

6/20/95  
6/21/95

*Acceptable SA/OC*  
*JS*  
*7/13/95*

## Halogenated Hydrocarbons by USEPA Method 8010

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Bromochloromethane	78		50	150
2-Bromo-1-chloropropane	59		50	150
1,4-Dichlorobutane	50		50	150

Analyte	Result (mg/L)	POL	Flags
Vinyl Chloride	ND	0.001	
1,1-Dichloroethene	ND	0.001	
Methylene Chloride	ND	0.001	
trans-1,2-Dichloroethene	ND	0.001	
1,1-Dichloroethane	ND	0.001	
Chloroform	ND	0.001	
1,1,1-Trichloroethane	ND	0.001	
Carbon Tetrachloride	ND	0.001	
1,2-Dichloroethane	ND	0.001	
Trichloroethene	ND	0.001	
1,2-Dichloropropane	ND	0.001	
Bromodichloromethane	ND	0.001	
cis-1,3-Dichloropropene	ND	0.001	
trans-1,3-dichloropropene	ND	0.001	
1,1,2-Trichloroethane	ND	0.001	
Tetrachloroethene	ND	0.001	
Chlorodibromomethane	ND	0.001	
Chlorobenzene	ND	0.001	
Bromoform	ND	0.001	
1,1,2,2-Tetrachloroethane	ND	0.001	
1,3-Dichlorobenzene	ND	0.001	
1,4-Dichlorobenzene	ND	0.001	
1,2-Dichlorobenzene	ND	0.001	

**MEMORANDUM****RECEIVED****To:** John Lambdin**Date:** June 05, 1995**JUL 13 1995****From:** Norman R. Norvelle**Place:** Field Services Engineering Lab  
Environmental Bureau  
Oil Conservation Division**Subject:** Angel Peak and Chaco Plant Solid Waste Pit Closure Sampling

On June 01, 1995 I re-sampled Angel Peak and Chaco Plant solid waste pits for final closure. I sampled two points at the bottom of each pit at a depth of one foot and then composite the two samples from each pit at the time of sampling. These were put into a 8 Oz. jar. The following analysis was requested: EPA method 8010 for TCLP organics. This was additional sampling requested by NMOCD.

The sample was iced in a cooler until received in the lab and then stored in the sample refrigerator. Today, the sample was packed in bubble wrap, iced and ship in a cooler to the BEI labs in Seattle. A temperature blank was included. The ancillary paper work is attached.

<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>
950654	6-1-95	1:15 PM	Chaco Plant Dump
950655	6-1-95	2:20 PM	Angel Peak Dump

Should you have any questions or comments, please give me a call.

  
Norman R. Norvelle, Senior Division Chemist

attachments

cc: David Hall

Patrick Marquez

Results Attached 7/13/95 J. Lambdin

**SOUND ANALYTICAL SERVICES INC.**

Client Name

Philip Environmental Laboratory

Client ID:

950654 95-A0715

Lab ID:

49276-01

Date Received:

8/7/95

Date Prepared:

8/20/95

Date Analyzed:

8/21/95

% Solids

Chaco Plant  
Dump Pit**TCLP Halogenated Hydrocarbons by USEPA Method 8010**

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Bromochloromethane	107		50	150
2-Bromo-1-chloropropane	64		50	150
1,4-Dichlorobutane	81		50	150

Analyte	Result (mg/L)	PQL	Flags
Vinyl Chloride	ND	0.001	
1,1-Dichloroethane	ND	0.001	
Methylene Chloride	0.081	0.001	
trans-1,2-Dichloroethane	ND	0.001	
1,1-Dichloroethane	ND	0.001	
Chloroform	ND	0.001	
1,1,1-Trichloroethane	ND	0.001	
Carbon Tetrachloride	ND	0.001	
1,2-Dichloroethane	ND	0.001	
Trichloroethane	ND	0.001	
1,2-Dichloropropane	ND	0.001	
Bromodichloromethane	ND	0.001	
cis-1,3-Dichloropropene	ND	0.001	
trans-1,3-dichloropropene	ND	0.001	
1,1,2-Trichloroethane	ND	0.001	
Tetrachloroethane	ND	0.001	
Chlorodibromomethane	ND	0.001	
Chlorobenzene	ND	0.001	
Bromoform	ND	0.001	
1,1,2,2-Tetrachloroethane	ND	0.001	
1,3-Dichlorobenzene	ND	0.001	
1,4-Dichlorobenzene	ND	0.001	
1,2-Dichlorobenzene	ND	0.001	

**SOUND ANALYTICAL SERVICES INC.**

Client Name  
Client ID:  
Lab ID:  
Date Received:  
Date Prepared:  
Date Analyzed:  
% Solids

Philip Environmental Laboratory  
950655 95-A9716  
49276-02  
6/7/95  
6/20/95  
6/21/95

Angel Peak  
Plant Dump  
P.T

**TCLP Halogenated Hydrocarbons by USEPA Method 8010**

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Bromochloromethane	103		50	150
2-Bromo-1-chloropropane	70		50	150
1,4-Dichlorobutane	73		50	150

Analyte	Result (mg/L)	PQL	Flags
Vinyl Chloride	ND	0.001	
1,1-Dichloroethene	ND	0.001	
Methylene Chloride	0.088	0.001	
trans-1,2-Dichloroethene	ND	0.001	
1,1-Dichloroethane	ND	0.001	
Chloroform	ND	0.001	
1,1,1-Trichloroethane	ND	0.001	
Carbon Tetrachloride	ND	0.001	
1,2-Dichloroethane	ND	0.001	
Trichloromethane	ND	0.001	
1,2-Dichloropropane	ND	0.001	
Bromodichloromethane	ND	0.001	
cis-1,3-Dichloropropene	ND	0.001	
trans-1,3-dichloropropene	ND	0.001	
1,1,2-Trichloroethane	ND	0.001	
Tetrachloroethene	ND	0.001	
Chlorodibromomethane	ND	0.001	
Chlorobenzene	ND	0.001	
Bromoform	ND	0.001	
1,1,2,2-Tetrachloroethane	ND	0.001	
1,3-Dichlorobenzene	ND	0.001	
1,4-Dichlorobenzene	ND	0.001	
1,2-Dichlorobenzene	ND	0.001	

**SOUND ANALYTICAL SERVICES INC.**

Lab ID:  
 Date Received:  
 Date Prepared:  
 Date Analyzed:  
 % Solids

Method Blank - B192095

6/20/95  
 6/21/95

Acceptable SA/OC  
 JF  
 7/13/95

**Halogenated Hydrocarbons by USEPA Method 8010**

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Bromochloromethane	78		50	150
2-Bromo-1-chloropropane	59		50	150
1,4-Dichlorobutane	50		50	150

Analyte	Result (mg/L)	POL	Flags
Vinyl Chloride	ND	0.001	
1,1-Dichloroethene	ND	0.001	
Methylene Chloride	ND	0.001	
trans-1,2-Dichloroethene	ND	0.001	
1,1-Dichloroethane	ND	0.001	
Chloroform	ND	0.001	
1,1,1-Trichloroethane	ND	0.001	
Carbon Tetrachloride	ND	0.001	
1,2-Dichloroethane	ND	0.001	
Trichloroethene	ND	0.001	
1,2-Dichloropropane	ND	0.001	
Bromodichloromethane	ND	0.001	
cis-1,3-Dichloropropene	ND	0.001	
trans-1,3-dichloropropene	ND	0.001	
1,1,2-Trichloroethane	ND	0.001	
Tetrachloroethene	ND	0.001	
Chlorodibromomethane	ND	0.001	
Chlorobenzene	ND	0.001	
Bromoform	ND	0.001	
1,1,2,2-Tetrachloroethane	ND	0.001	
1,3-Dichlorobenzene	ND	0.001	
1,4-Dichlorobenzene	ND	0.001	
1,2-Dichlorobenzene	ND	0.001	

BIRMINGHAM ENVIRONMENTAL  
2200 Airport Way South, Suite 400  
Birmingham, AL 35204  
205-220-9900 • FAX: 225-7791

# Chain of Custody/ Laboratory Analysis Request

DATE 6-5-95 PAGE 1 OF 1

OBJECT				ANALYSIS REQUESTED										OTHER (Specify)		NUMBER OF CONTAINERS		RECEIVED IN GOOD CONDITION?	
EL PASO NATURAL GAS COMPANY EL PASO DIVISION GENERATOR NAME <u>CAHILL/STILL</u> PHONE # <u>505/599-2153</u> ANALYST NAME <u>NORMAN NICHOLSON</u> PHONE # <u>505-2153</u> ANALYST SIGNATURE <u>Norman K. Nicholson</u>				BASE/NEU/AC/O ORGAN GC/MS 625/620 VOLATILE ORGANICS GC/MS 824/820 PCB's 608/6060 TPH (circle method) 418.1 or 8015 BTEX (circle method) 8240 or 8020 P-LISTED SOLVENTS 8240 TCLP FLUOR SOLVENTS 1311/8240 TCLP METALS 8004-1 METALS (TOTAL) As, Ba, Cd, Cr, Cu, Pb, Ni, Hg, Ag, Se, Ti, Zn, Zn TCLP ORGANICS (Specify methods) • VOA's 8240 • BNA's 8270 • Persulfate 8006 • Mercury 8130 DISCHARGE TESTING <u>YES</u>										X <u>YES</u>		1 1		1 1	
SAMPLE I.D. <u>750654</u> <u>750655</u> DATE <u>6-1-95</u> <u>6-1-95</u> TIME <u>1:15 PM</u> <u>2:20 PM</u> LAB I.D. <u>98-08715</u> <u>95-A9216</u> TYPE <u>SOL</u> <u>SOL</u>																			
Requested By <u>Norman K. Nicholson</u> Signature Printed Name Firm <u>EL PASO NATURAL GAS CO</u> Date/Time <u>6-5-95 2:45 PM</u>				Requisitioned By Signature Printed Name Firm Date/Time										Requisitioned By Signature Printed Name Firm Date/Time		SPECIAL INSTRUCTIONS/REMARKS: <u>750654 - CHACO PLANT DUMP COMPACT</u> <u>750655 - ANGEL PEAK DUMP COMPACT</u>			
Received By Signature Printed Name Firm Date/Time				Received By Signature Printed Name Firm Date/Time										Received By Signature Printed Name Firm Date/Time					
<del>Signature</del> <del>Printed Name</del> <del>Firm</del> <del>Date/Time</del>				<del>Signature</del> <del>Printed Name</del> <del>Firm</del> <del>Date/Time</del>										A path 6/6/95 15:00					

950-27  
950655

[illegible]

**SENDER'S COPY**

**FAX  
TRANSMITTAL****EL PASO NATURAL GAS COMPANY**

is a major open-access transporter of natural gas serving West Texas, New Mexico, Arizona, southern Nevada and California. California receives more than half of its gas from El Paso's 17,500-mile pipeline system, which is connected to every major producing basin in the Southwest. El Paso's customer-friendly electronic bulletin board, Passport, offers state-of-the-art programs beneficial to producers, buyers marketers, end-users and other pipelines.

<b>TO</b>	NAME OF RECIPIENT <i>MR. BILL OLSON</i>		PAGE(S) TRANSMITTED <i>6 + Cover</i>	DATE <i>7/13/95</i>
	NAME OF COMPANY <i>NMOC</i>		CITY/STATE	
	ADDRESS		TELEPHONE NUMBER	
	FAX NUMBER (REQUIRED) <i>1 505 827 8177</i>			
<b>FROM</b>	NAME OF SENDER <i>Patrick Martinez</i>		NAME OF COMPANY <input type="checkbox"/> EL PASO NATURAL GAS <input checked="" type="checkbox"/> OTHER	
	ADDRESS <i>505 599 2175</i>		CITY/STATE	
<b>REMARKS</b>	<input type="checkbox"/> RETURN <input type="checkbox"/> DO NOT RETURN <i>As required - TCLP 8010 Organics analysis for Chaco Plant &amp; Angel Peak Solid Waste Dumps. Please call when you receive this fax - Hard copy to follow via mail. Thank you Patrick Martinez.</i>		<b>REPLY</b>	FAX NUMBER: ( )
				VERIFY NUMBER: ( )





State of New Mexico  
**ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT**  
Santa Fe, New Mexico 87505

STATE OF  
NEW MEXICO  
OIL  
CONSERVATION  
DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time 0830

Date 5/31/95

Originating Party

Bill Olson - Envir. Bureau

Other Parties

Patrick Marquez - EPN6

Subject

4/10/95 Angel Peak/Chaco Solid Waste Pit Closures

Discussion

Told him not all haz characteristics analyzed  
Need chlorinated organics, pesticides, herbicides  
It didn't use pesticides, herbicides, can provide statement  
of process knowledge

Conclusions or Agreements

He will get analyses

Distribution

f.l.e

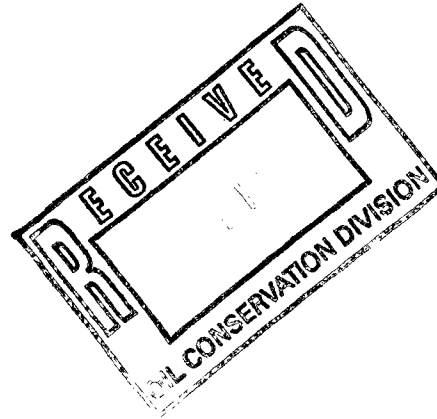
Denny Foust - OCO Aztec

Signed

Bill Olson

**El Paso**  
Natural Gas Company

P. O. BOX 4990  
FARMINGTON, NEW MEXICO 87499



May 3, 1995

Mr. Roger Anderson  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504


**Re: Contact Water Ponds at El Paso Natural Gas Company's Chaco Plant**

Dear Mr. Anderson:

Enclosed are the "As Builts" for the contact water ponds at Chaco Plant. As per the August 16, 1994 letter to NMOCD requesting approval for construction, EPNG agreed to submit the drawings to NMOCD upon completion.

Should you have questions or need further information, please do not hesitate to call at (505) 599-2175.

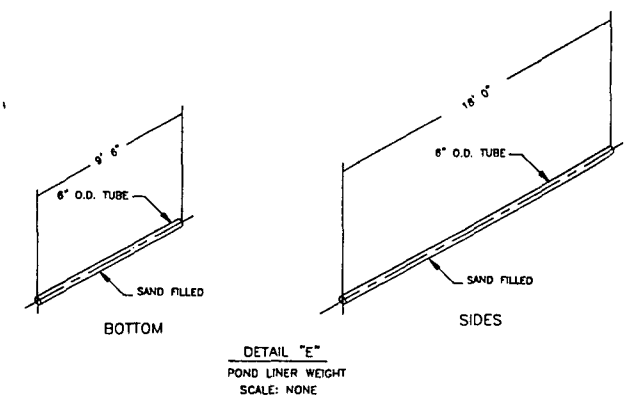
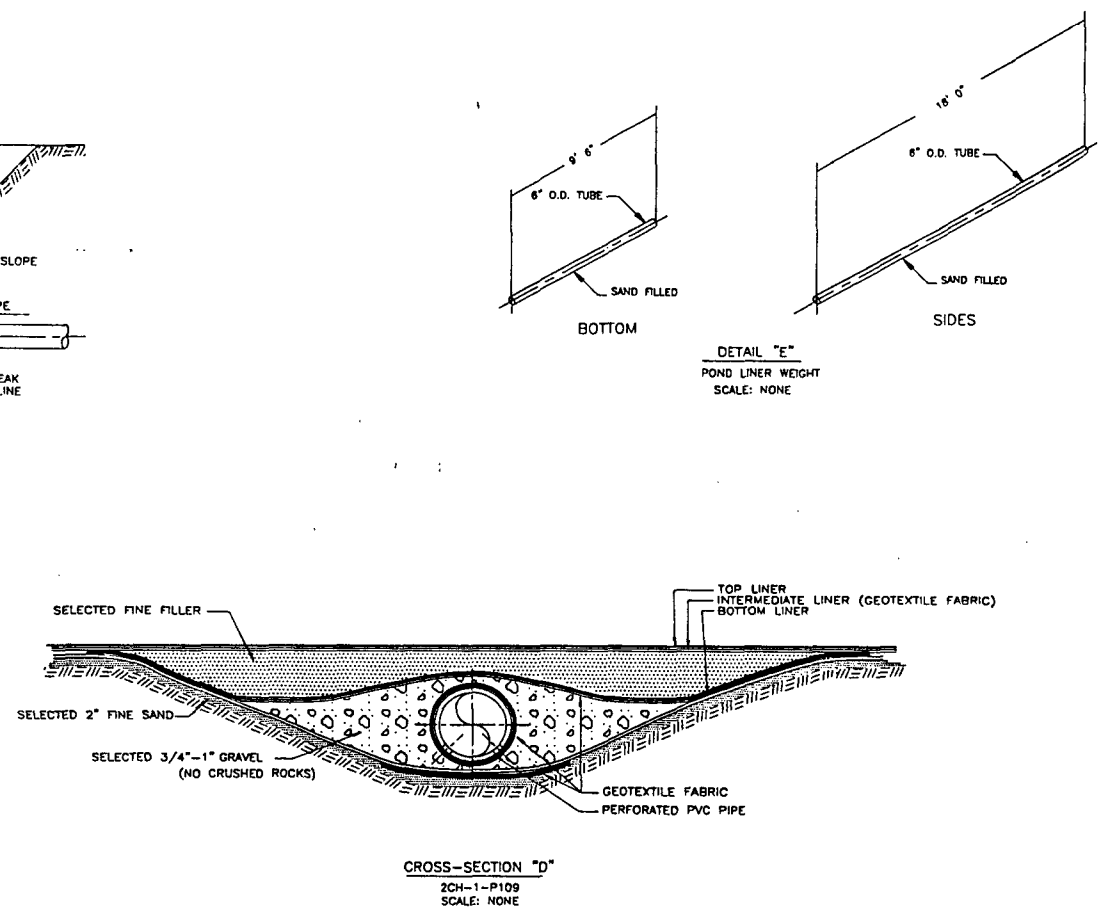
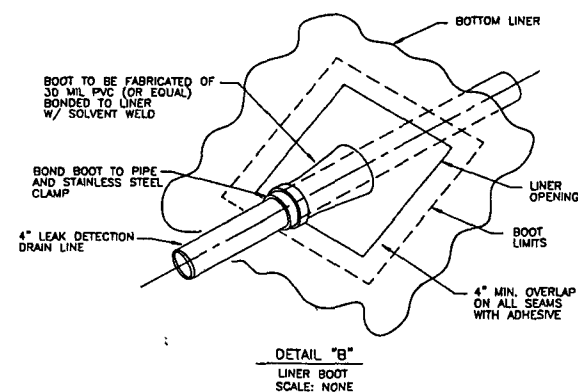
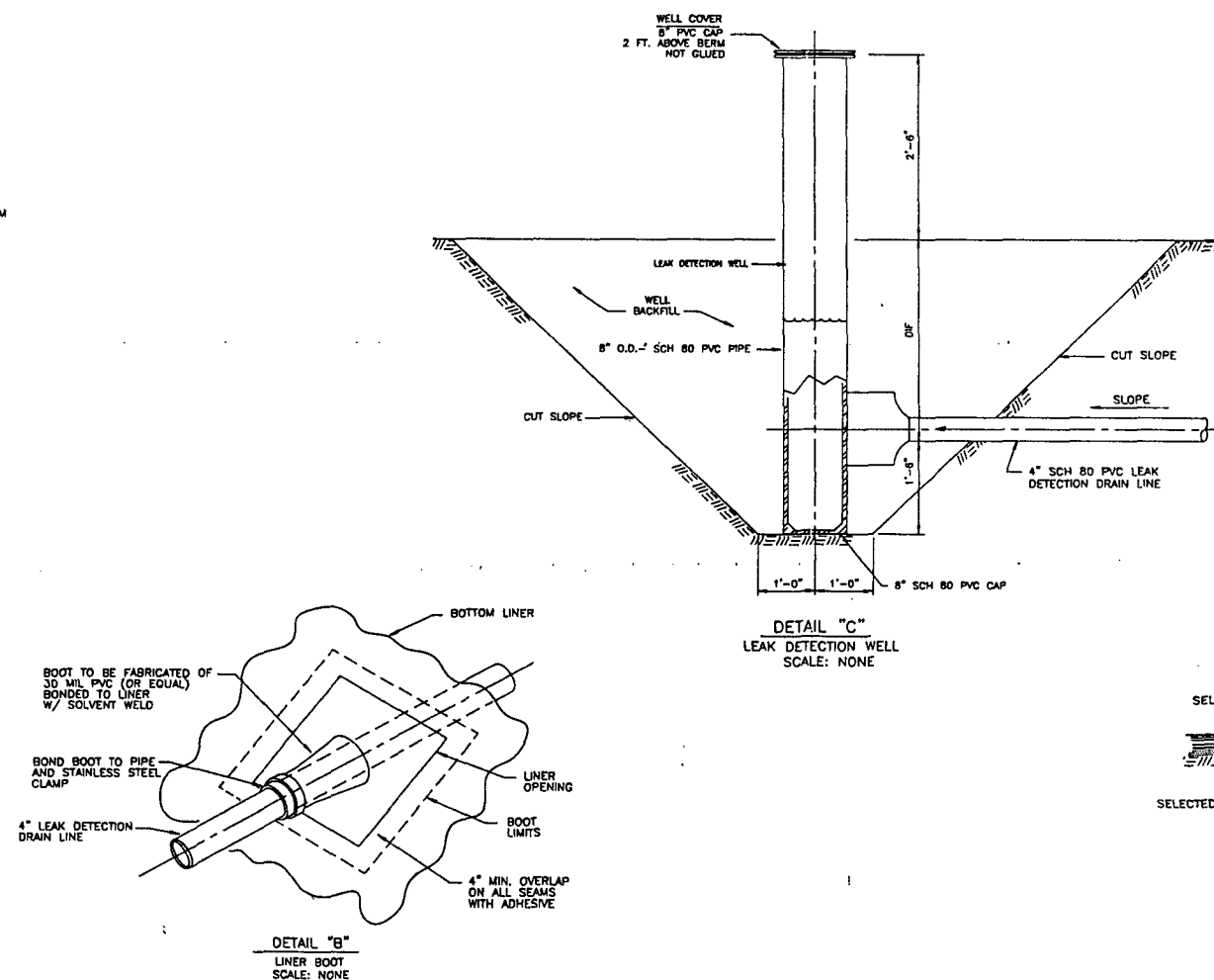
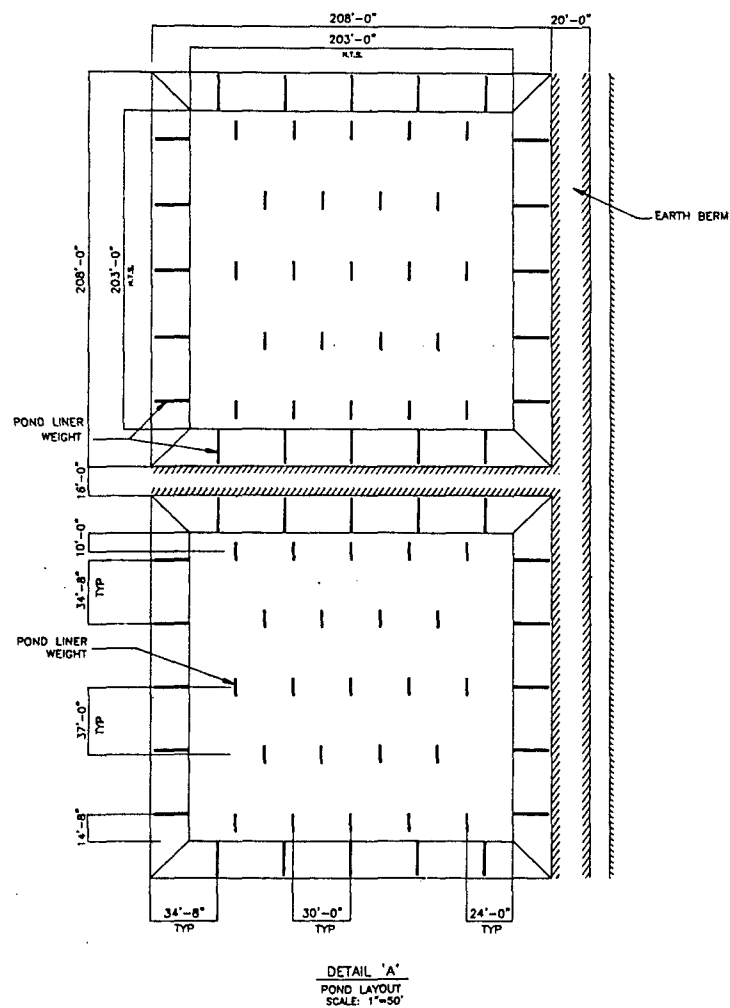
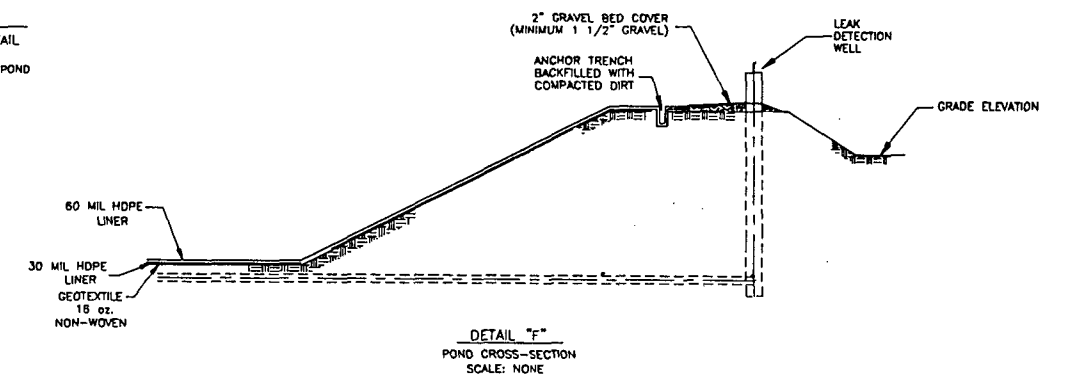
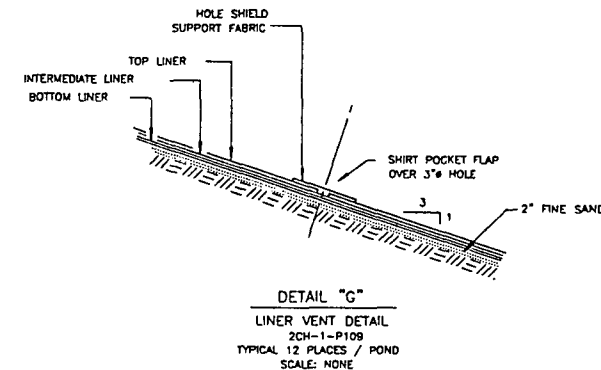
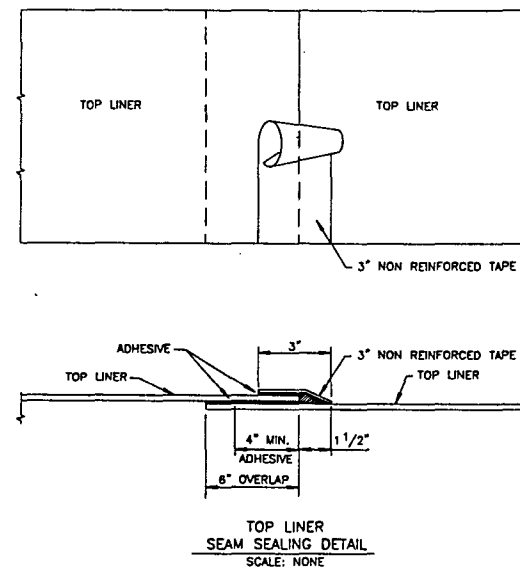
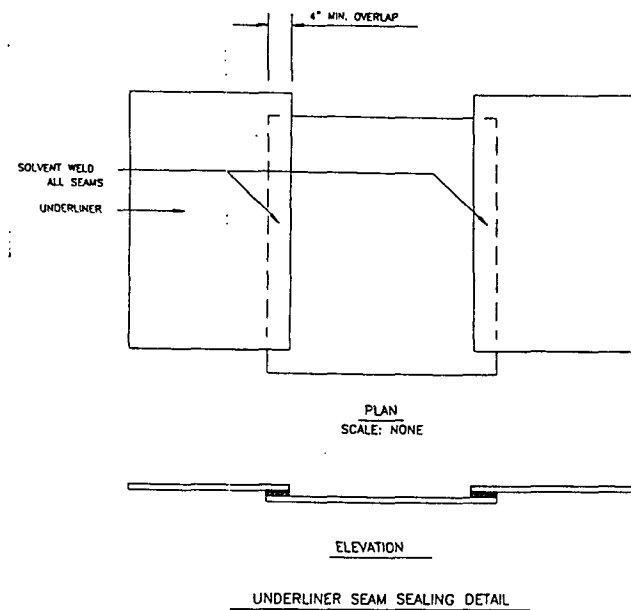
Thank you,

  
Patrick Marquez  
Compliance Engineer

cc:

w/attachment  
Denny Foust (NMOCD)  
John Lambdin (EPNG)  
Lyndell Smith (EPNG)  
Vince Medrano (EPNG)

w/o attachments (EPNG)  
Richard Carr  
David Hall  
Bob Yungert  
Sandra Miller/David Bays/ File:5212 Regulatory



CROSS-SECTION "D"  
2CH-1-P109  
SCALE: NONE

ENG. RECORD	DATE
DRAFTING	
DESIGN	
COMPUTER AIDED DRAFTING	BL 03/22/95
CHECKED	
PROJECT APPROVAL	
DESIGN APPROVAL	REC 5/5/95
COMPUTER SAVE NAME	2CH1P108

<b>El Paso</b> NATURAL GAS COMPANY	CHACO PLANT EVAPORATION PONDS AS-BUILT DETAILS
SCALE: SHOWN W.O.: L5835	DWG. NO. 2CH-1-P108
REV.	

DWG. NO.	TITLE	NO	DATE	BY	DESCRIPTION	W.O.	APP.	PRT.	SEP	DATE	TO	W.O.
2CH-1-P108	CHACO PLANT - EVAP. PONDS - AS BUILT											

REVISIONS

PRINT RECORD

REV.



**El Paso**  
Natural Gas Company

CONSERVATION DIVISION  
RECEIVED

APR 10 1995 PM 8 52

P. O. BOX 4990  
FARMINGTON, NEW MEXICO 87499

April 10, 1995

Mr. Bill Olson  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504

**Re: Solid Waste Pit Closures at EPNG's Angel Peak and Chaco facilities**

Dear Mr. Olson:

Enclosed are the analyses for the subject solid waste pits. As per the November 22, 1995 NMOCD approval letter for closure, EPNG is required to submit the analytical results prior to the actual closure of the pits and will notify OCD of all activities 72 hours in advance such that OCD has the opportunity to witness the events.

Please review the enclosed analyses and respond to me at 505-599-2175 at your earliest convenience.

Thank you,

*P. S. Marquez*  
Patrick Marquez  
Compliance Engineer

cc:

Denny Foust (NMOCD)

w/o enclosures

Ron Jones (EPNG)  
David Hall (EPNG)  
Sandra Miller (EPNG)  
Lyndell Smith (EPNG)  
File: 5212 Regulatory

## STATE OF NEW MEXICO

## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY



2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

November 22, 1994

**CERTIFIED MAIL****RETURN RECEIPT NO. P-667-242-177**

Mr. Patrick Marquez  
Compliance Engineer  
El Paso Natural Gas Company  
P.O. Box 4990  
Farmington, New Mexico 87499

**RE: SOLID WASTE PIT CLOSURES  
ANGEL PEAK COMPRESSOR STATION AND CHACO GAS PLANT  
SAN JUAN COUNTY, NEW MEXICO**

Dear Ms. Miller:

The New Mexico Oil Conservation Division (OCD) has reviewed El Paso Natural Gas Company's (EPNG) September 12, 1994 "SOLID WASTE PIT CLOSURES AT EPNG'S ANGEL PEAK AND CHACO FACILITIES". This document contains EPNG's proposed closure plan for closure of former solid waste pits at EPNG's Angel Peak Compressor Station and Chaco Gas Plant.

The proposed closure plan as contained in the above referenced document **is approved with the following conditions:**

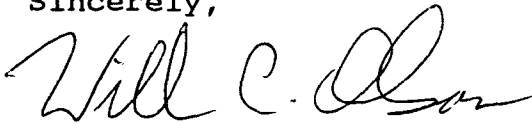
1. In addition to the soil sampling proposed, EPNG will analyze samples from the pits for hazardous waste characteristics.
2. All sample analyses will be conducted using EPA approved laboratory methods.
3. The results of the analytical sampling will be submitted to the OCD for approval prior to actual closure of the pits.
4. EPNG will notify the OCD at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples.
5. All original documents will be submitted to the OCD Santa Fe Office with copies provided to the OCD Aztec Office.

Mr. Patrick Marquez  
November 22, 1994  
Page 2

Please be advised that OCD approval does not limit EPNG to the work proposed should contaminants be found to be migrating from the site or if contamination exists which is beyond the scope of the work plan. In addition, OCD approval does not relieve EPNG of responsibility for compliance with any other federal, state and local laws and/or regulations.

If you have any questions, please contact me at (505) 827-5885.

Sincerely,

A handwritten signature in cursive script, appearing to read "Will C. Olson".

William C. Olson  
Hydrogeologist  
Environmental Bureau

xc: OCD Aztec District Office

**To:** (Distribution)

**Date:** March 1, 1995

**From:** John Lambdin J.L.

**Place:** Field Services Laboratory

**Subject: Angel Peak Solid Waste Pit Closure Results**

On January 11, 1995 the Field Services Laboratory collected one (1) soil sample from the solid waste pond at Angel Peak Plant. The sample was assigned Field Services laboratory number 950053.

The sample was collected and analyzed in accordance with New Mexico OCD guidelines for pit closure. The sample passed all the required tests. Enclosed you will find copies of all field and analytical laboratory results/data.

Please let me know, if you have any questions.

**Distribution:**

David Hall - w/o attachments  
Sandra Miller  
Results Log Book  
File

**Attachments**





**FIELD SERVICES LABORATORY  
ANALYTICAL REPORT**

**SAMPLE IDENTIFICATION**

**SAMPLE NUMBER:** 950053  
**MATRIX:** Soil  
**SAMPLE DATE:** 11-Jan-95  
**SAMPLE TIME (Hrs.):** 1030  
**SAMPLED BY:** Norman Norvelle  
**PROJECT:** Pit Closure  
**FACILITY ID:** 5203  
**SAMPLE LOCATION:** Angel Peak  
**SAMPLE POINT:** Solid Waste Pit  
**DATE OF ANALYSIS:** Extracted for BTEX on 1/23/1995 and analyzed for BTEX on 1/23/1995.  
Extracted for TPH on 1/17/1995 and analyzed for TPH on 1/17/1995.

**REMARKS:** None

**EPA Method 8020 (BTEX) and Method 418.1 (TPH) RESULTS**

PARAMETER	RESULT MG/KG	QUALIFIER	LIMIT MG/KG
BENZENE	<0.005	None	10
TOLUENE	<0.005	None	None
ETHYL BENZENE	<0.005	None	None
TOTAL XYLENES	<0.005	None	None
TOTAL BTEX	<0.020	None	50
TPH by EPA 418.1	36	None	100
PERCENT SOLIDS	90	None	
SURROGATE % RECOVERY	94	Allowed Range 80 to 120 %	

**NOTES:**

The limits shown are based on New Mexico Regulations.

Approved By: John Fardier

1-Mar-95  
Date

**LABORATORY CONTROL SAMPLES: CALIBRATION CHECKS**

SAMPLE ID	SOURCE	TRUE VALUE (PPM)	FOUND (MG/KG)	%R	ACCEPTABLE RANGE 75-125 %R YES NO
INITIAL CALIBRATION VERIF. "B" Heavy Oil (Lot M3G9616)	HORIBA	200	193	97	X

Narrative: Acceptable.

**LABORATORY DUPLICATES:**

SAMPLE NUMBER	TYPE	SAMPLE RESULT (S)MG/KG	DUPLICATE RESULT (D)MG/KG	RPD	ACCEPTABLE RANGE + / - 35% YES NO
946569	2nd Extract	491	411	17.7	X
946572	2nd Extract	430	481	11.2	X

Narrative: Acceptable.

**LABORATORY SPIKES:**

SAMPLE NUMBER	SPIKE ADDED (SA)MG/KG	SAMPLE RESULT (S)MG/KG	SPIKE SAMPLE RESULT (SR)MG/KG	%R	ACCEPTABLE RANGE 75-125 %R YES NO
946569	3050	491	3950	113	X
946572	2780	430	3670	117	X

Narrative: Acceptable.

**REFERENCE SOIL (Laboratory Control Sample):**

SAMPLE ID	SOURCE	KNOWN VALUE (MG/KG)	SAMPLE RESULT FOUND (MG/KG)	MFG SPECIFIED RANGE	ACCEPTABLE YES NO
RA TPH STANDARD #1 DT # 91026	ENVIRONMENTAL RESOURCE ASS.	1340	1540	804 - 1680	X
RA TPH STANDARD #2 w/int DT # 91026	ENVIRONMENTAL RESOURCE ASS.	2590	3100	1550 - 3240	X

Narrative: Acceptable.

**LABORATORY REAGENT BLANK:**

SAMPLE ID	SOURCE	TPH LEVEL (MG/KG)	STATUS
Freon Solvent	EPNG Lab	< 10.0	ACCEPTABLE
Reagent Blank	EPNG Lab	< 10.0	ACCEPTABLE

Narrative: Acceptable.

Approved By: 

Date: 3-Feb-95

Extracted: 01/17/95

## LABORATORY CALIBRATION CHECKS, LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER TCV LA-1/1426 25 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	25.0	25.7	102.8	75 - 125 %	X
Toluene	Standard	25.0	28.3	113.2	75 - 125 %	X
Ethyl Benzene	Standard	25.0	25.9	103.6	75 - 125 %	X
Total 3 Comp	Standard	75.0	81.3	108.4	75 - 125 %	X
SAMPLE NUMBER TCV LA-1/1426 200 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	200	221	110.5	75 - 125 %	X
Toluene	Standard	200	209	104.5	75 - 125 %	X
Ethyl Benzene	Standard	200	213	106.5	75 - 125 %	X
1,2,4-Trimethyl Benzene	Standard	400	401	100.3	75 - 125 %	X
o-Xylene	Standard	200	212	106.0	75 - 125 %	X
SAMPLE NUMBER LCS DB-1/1426 25 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	25.0	25.6	102.4	39 - 150	X
Toluene	Standard	25.0	27.0	108.0	46 - 148	X
Ethyl Benzene	Standard	25.0	26.2	104.8	32 - 160	X
Total 3 Comp	Standard	75.0	79.7	106.3	Not Given	X
SAMPLE NUMBER CCV LA-1/1426 25 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	25.0	23.4	93.6	75 - 125 %	X
Toluene	Standard	25.0	24.6	98.4	75 - 125 %	X
Ethyl Benzene	Standard	25.0	23.0	92.0	75 - 125 %	X
Total 3 Comp	Standard	75.0	69.3	92.4	75 - 125 %	X

All data Acceptable.

SAMPLE NUMBER	TYPE (Analysis, Portion, or Sample)	RESULT PPM (mg/Kg)	RESULT PPM (mg/Kg)	RPD	RANGE	ACCEPTABLE YES	NO
750053	SOIL VIAL						
Benzene	2nd Portion	<0.005	<0.005	0	+/- 35 %	X	
Toluene	2nd Portion	<0.005	<0.005	0	+/- 35 %	X	
Ethyl benzene	2nd Portion	<0.005	<0.005	0	+/- 35 %	X	
Total Xylenes	2nd Portion	<0.015	<0.005	0	+/- 35 %	X	

Narrative: Acceptable.

SAMPLE NUMBER	TYPE (Analysis, Portion, or Sample)	SAMPLE RESULT PPM (mg/Kg)	DUPLICATE RESULT PPM (mg/Kg)	RPD	RANGE	ACCEPTABLE YES	NO
946557	EXTRACT						
Benzene	2nd Portion	<2.90	<2.87	0	+/- 35 %	X	
Toluene	2nd Portion	132	124	6	+/- 35 %	X	
Ethyl benzene	2nd Portion	21.9	19.2	13	+/- 35 %	X	
Total Xylenes	2nd Portion	186	202	8	+/- 35 %	X	

Narrative: Acceptable.

#### LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	RANGE	ACCEPTABLE YES	NO
750053 @ 40 PPB							
SOIL VIAL - 2nd Portion							
Benzene	40.0	<5.00	30.5	76	75 - 125 %	X	
Toluene	40.0	<5.00	33.4	84	75 - 125 %	X	
Ethyl benzene	40.0	<5.00	25.4	64	75 - 125 %		X
Total Xylenes	120.0	<15.0	106	88	75 - 125 %	X	

Narrative: Acceptable. Reduced %R possibly due to old spike solution.

SAMPLE NUMBER	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	RANGE	ACCEPTABLE YES	NO
946559 @ 40 PPB							
EXTRACT - 2nd Portion							
Benzene	40.0	0.0	31.6	79	75 - 125 %	X	
Toluene	40.0	81	67	83	75 - 125 %		X
Ethyl benzene	40.0	12.2	47	87	75 - 125 %	X	
Total Xylenes	120.0	94.4	192.0	81	75 - 125 %	X	

Narrative: Acceptable. Reduced %R possibly due to old spike solution.

#### ADDITIONAL ANALYTICAL BLANKS:

SAMPLE ID	SOURCE	PPB	STATUS
AUTO BLANK			
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable

SAMPLE ID	SOURCE	PPB	STATUS
SOIL VIAL BLANK			
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID EXTRACTION BLANK	SOURCE	PPB (In 200 mL shoe)	STATUS
Benzene	Methanol	N/A	ACCEPTABLE
Toluene	Methanol	N/A	ACCEPTABLE
Ethyl benzene	Methanol	N/A	ACCEPTABLE
Total Xylenes	Methanol	N/A	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID Carryover contamination checks	SOURCE	NARRATIVE	STATUS
1/11	Vial + Boiled Water	All analytical compounds <2.5 ppb	ACCEPTABLE
5/11	Vial + Boiled Water	All analytical compounds <2.5 ppb	ACCEPTABLE
9/11	Vial + Boiled Water	All analytical compounds <2.5 ppb	ACCEPTABLE
11/11	Vial + Boiled Water	All analytical compounds <2.5 ppb	ACCEPTABLE

Narrative: Acceptable.

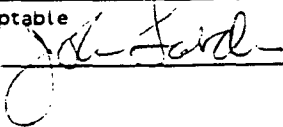
AGENT BLANKS:

SAMPLE ID BOILED WATER CHECK	SOURCE 12/13/94	PPB	STATUS
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

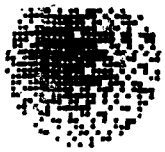
Narrative: Acceptable

SAMPLE ID METHANOL CHECK	SOURCE 12/28/94	PPB	STATUS
Benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Toluene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	MeOH/Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable

Approved By: 

Date: 27-Jan-95



# BURLINGTON ENVIRONMENTAL

A Philip Environmental Company

January 23, 1995  
Field Services Lab

Mr. John Lambdin  
El Paso Natural Gas Company  
Field Services Laboratory  
P.O. Box 4990  
Farmington, NM 87499

COPY

Dear Mr. Lambdin:

Subject: Project: EPNG

EPNG Laboratory Numbers: 950053

Burlington Environmental Laboratory Numbers: 95A583

LIMS Job Number: 1937

Charge Code: Not Supplied

EPNG Agreement for Professional Environmental Services, Contract 5769

Analytical Services Blanket Contract Supplement Number 5769-92-3

Burlington Environmental Inc., (BEI) hereby submits the enclosed invoice for the work performed on the above-referenced project.

The analyses performed on this project include:

- Polychlorinated Biphenyls (PCBs)
- Ignitability
- Toxicity Characteristic Leaching Procedure (TCLP 1311): Metals (D004-D011)

The project costs are summarized on the attached invoice. If you have any questions or need additional information concerning this invoice, please do not hesitate to contact me at 206-227-6102.

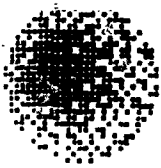
Sincerely yours,

BURLINGTON ENVIRONMENTAL INC.

Della K. Wilson  
Project Manager

Enclosure: Invoice





# BURLINGTON ENVIRONMENTAL

*A Philip Environmental Company*

January 23, 1995

John Lambdin  
El Paso Natural Gas Co.  
Field Services Lab  
P.O. Box 4990  
Farmington, NM 87499

Project: EL PASO NATURAL GAS CO.  
Laboratory Job Number: 1937

On January 13 we received 1 sample(s).  
We performed the following analyses:

TCLP Metals  
PCB's  
Flash Closed Cup

Instrument: Hewlett Packard 5890 GC

All samples were analyzed according to Methods specified in the work plan or Chain of Custody. Any deviations or exceptions to the standard methods are covered in Data Validation Notes.

All samples were extracted and analyzed within required holding times unless so noted.

Analysis and review was complete on January 23.

Sincerely,

Della K. Wilson  
Project Manager  
(206) 227-6102  
Burlington Environmental Corporate Lab  
Washington Accreditation #C021







## MEMORANDUM

---

**To:** John Lambdin

**Date:** January 12, 1995

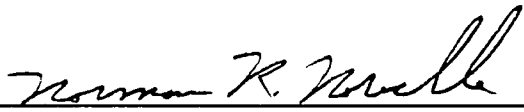
**From:** Norman R. Norvelle

**Place:** Field Services Engineering Lab

**Subject:** Angel Peak Solid Waste Pit Closure Sampling

On January 11, 1995 at 10:00 AM, I met with Denny Foutz of NMOCD to witness my sampling of the Angel Peak Plant solid waste pit for closure. Mr. Foutz had me sample two points at the bottom of the pit at a depth of one foot and then composite the two samples. These were put into a 16 oz. jar, 8 Oz. jar and a 4 Oz. jar. An extra 16 Oz. jar was collected to store in our refrigerator. The actual sample was taken at 13:30 AM. The assigned sample number was 950053. The following analysis was requested: BTEX, PCB, IGN, TCLP metals, and TPH.

The sample was iced in a cooler until received in the lab and then stored in the sample refrigerator. Today, the sample was packed in bubble wrap, iced and ship in a cooler to the BEI labs in Seattle. A temperature blank was included. Below is a picture of the pit. The ancillary paper work is attached.

  
Norman R. Norvelle, Senior Division Chemist

attachments

cc: David Hall





**Contract Laboratory**

**WHITE-Testing Laboratory**  
**YELLOW-EPT.G Lab**  
**PINK-Field Sampler**



USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.  
USE THE INTERNATIONAL AIRWAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.  
QUESTIONS? CALL 800-238-5355 TOLL FREE.

**AIRBILL**  
PACKAGE  
TRACKING NUMBER

**3622533633**

**3622533633**

SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER

Date

1-13-15

**SENDER'S COPY**

From (Your Name) Please Print

JAMES CAMPBELL

Company

770 S. GAVIN RD.

City

FRANKFURT

State

MISSOURI

ZIP Required

63001

Your Phone Number (Very Important)

(505) 533-2144

Department/Floor No.

2

To (Recipient's Name) Please Print

SAMPLE CONTROL

Company

PUBLIC RELATIONS ENVIRONMENTAL

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes)

555 HOWELL AVE SW

City

ALBUQUERQUE

State

NEW MEXICO

ZIP Required

87102

Recipient's Phone Number (Very Important)

(206) 222-0111

Department/Floor No.

206

IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here

Street

Address

City

State

ZIP Required

5 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning)

11 OTHER PACKAGING

16 FEDEX LETTER

12 FEDEX PAK

13 FEDEX BOX

14 FEDEX TUBE

Economy Two Day (Delivery by second business day)

30 ECONOMY

36 FEDEX LETTER

40 FEDEX PAK

42 FEDEX BOX

44 FEDEX TUBE

Government Overnight (Delivery by next business morning)

46 GOVT LETTER

48 GOVT PAK

50 GOVT BOX

52 GOVT TUBE

Freight Service (For packages over 150 lbs)

70 OVERNIGHT

80 TWO DAY

90 FREIGHT

100 FREIGHT

110 FREIGHT

120 FREIGHT

130 FREIGHT

140 FREIGHT

5 DELIVERY AND SPECIAL HANDLING (Check services required)

1 HOLD AT FEDEX LOCATION WEEKDAY

2 DELIVER WEEKDAY

31 HOLD AT FEDEX LOCATION SATURDAY

3 DELIVER SATURDAY

9 SATURDAY PICK-UP

4 DANGEROUS GOODS

6 DRY ICE

12 HOLIDAY DELIVERY

YOUR DECLARED VALUE (See page 1)

16

WEIGHT in Pounds (See page 1)

16

PACKAGES

1

Total

16

Exp. Date

1

Bill Credit Card

4

Bill 3rd Party FedEx Acct No

3

Bill Recipient's FedEx Acct No

2

Bill Sender

1

Check

5

Acct Credit Card No

1

Exp. Date

1

Bill Credit Card

4

Bill 3rd Party FedEx Acct No

3

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information. Service conditions may vary for Government Overnight Service. See U.S. Government Service Guide for details.

We will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, or any combination thereof, unless you declare a higher value, pay an additional charge, and document your actual loss. Your claim limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income, interest, profit, attorney's fees, costs, and other forms of damage, whether direct, incidental, consequential, or special is limited to the greater of \$100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx PAK packages is \$500.

In the event of untimely delivery, Federal Express will at your request pay a transportation charge for the transportation charges paid. See Service Guide for further information.

Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

REVISION DATE 4/94

PAH 01154127X14 11/94

FORMAT 0100

01993-01E1EX

0110101N

U.S.A.

160

160

160

160

160

160

160

160

160

160

160

160

160



ENERGY, MINERAL AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
505) 827-7131

ANITA LOCKWOOD  
CABINET SECRETARY

November 22, 1994

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-667-242-177**

Mr. Patrick Marquez  
Compliance Engineer  
El Paso Natural Gas Company  
P.O. Box 4990  
Farmington, New Mexico 87499

RE: SOLID WASTE PIT CLOSURES  
ANGEL PEAK COMPRESSOR STATION AND CHACO GAS PLANT  
SAN JUAN COUNTY, NEW MEXICO

*Sohr, can we make  
arrangements for sampling  
& Testing?*

*Thanks  
PJM*

Dear Ms. Miller:

The New Mexico Oil Conservation Division (OCD) has reviewed El Paso Natural Gas Company's (EPNG) September 12, 1994 "SOLID WASTE PIT CLOSURES AT EPNG'S ANGEL PEAK AND CHACO FACILITIES". This document contains EPNG's proposed closure plan for closure of former solid waste pits at EPNG's Angel Peak Compressor Station and Chaco Gas Plant.

The proposed closure plan as contained in the above referenced document is approved with the following conditions:

1. In addition to the soil sampling proposed, EPNG will analyze samples from the pits for hazardous waste characteristics.
2. All sample analyses will be conducted using EPA approved laboratory methods.
3. The results of the analytical sampling will be submitted to the OCD for approval prior to actual closure of the pits.
4. EPNG will notify the OCD at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples.
5. All original documents will be submitted to the OCD Santa Fe Office with copies provided to the OCD Aztec Office.

Mr. Bill Olson  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504

September 12, 1995

**Subject: Solid Waste Pit Closures at EPNG's Angel Peak and Chaco facilities**

Dear Mr. Olson:

Below are the plans for closure of the subject pits for your review and approval. The Angel Peak and Chaco pits historically received waste generated from the field operations until mid 1992 and March of 1994, respectively. Waste Management of Four Corners currently services both facilities.

**Pit Locations and Dimensions**

Chaco SW/4, Section 16, T-26-N, R-12-W  
50 x 7 x 2.5 yards

Angel Pk NE/4, Section 8, T-27-N, R-10-W  
35 x 5 x 3 yards

**Facility Operations**

- Typical contents would include: office paper products, wood, tin and aluminum cans, glycol and engine oil filters (drained before deposited), oily rags and small pieces of concrete.
- The pits never received liquids or household trash as both the Chaco and Angel Peak camps were retired in 1986.
- The Angel Peak pit has not received field waste for nearly two years and no plant trash since 1990. The pit was burned approximately once a week while in operation.
- The Chaco pit has not received trash since March of 1994 and was burned approximately once a month.

**Closure**

- A composite soil sample will be taken from the surface of the pit walls and the bottom of the pit approximately one foot deep.
- The representative sample will be analyzed for BTEX, PCBs, Ignitability, RCRA TCLP for metals and Total Petroleum Hydrocarbons.
- Upon submission of the test results, the pits will be filled with the original soil (current berm material), machine compacted and covered with an 18" cap designed to drain storm water.
- The pit locations relative to the plant surroundings are attached.
- Each pit lies on EPNG property.

El Paso Natural Gas respectfully request approval of the pit closure plans. Should you have questions, please call at 505 599 2175.

Thank you.

Patrick Marquez  
Compliance Engineer

**To:** (Distribution)  
**From:** John Lambdin

*J-L*

**Date:** March 21, 1995  
**Place:** Field Services Laboratory

**Subject: Chaco Plant Solid Waste Pit Closure Results**

On February 3, 1995 the Field Services Laboratory collected one (1) soil sample from the solid waste pit at Chaco Plant. The sample was assigned Field Services laboratory number 950081.

The sample was collected and analyzed in accordance with New Mexico OCD guidelines for pit closure. The sample passed all the required tests. Enclosed you will find copies of all field and analytical laboratory results and field data.

Please let me know, if you have any questions.

**Distribution:**

David Hall - w/o attachments  
Sandra Miller *for QB*  
Results Log Book  
File *5212 Analytical*

**Attachments**



# BURLINGTON ENVIRONMENTAL

*A Philip Environmental Company*

February 21, 1995  
Field Services Lab

Mr. John Lambdin  
El Paso Natural Gas Company  
Field Services Laboratory  
P.O. Box 4990  
Farmington, NM 87499

Dear Mr. Lambdin:

Subject: Project: Chaco Plant Trash Pit Soil  
EPNG Laboratory Number: 950081  
Burlington Environmental Laboratory Number: 95A2061  
Burlington Environmental LIMS Job Number: 2331  
Charge Code: Not Supplied  
EPNG Agreement for Professional Environmental Services. Contract 5769  
Analytical Services Blanket Contract Supplement Number 5769-92-3

Burlington Environmental Inc., (BEI) hereby submits the enclosed invoice for the work performed on the above-referenced project.

The analyses performed on this project include:

- Polychlorinated Biphenyls (PCBs)
- Ignitability (Flash Point, Method 1020)
- Toxicity Characteristic Leaching Procedure (TCLP 1311): Metals (D004-D011)

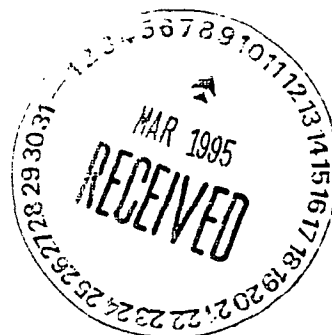
The project costs are summarized on the attached invoice. If you have any questions or need additional information concerning this invoice, please do not hesitate to contact me at 206-227-6100.

Sincerely yours,

BURLINGTON ENVIRONMENTAL INC.

Kathy E. Kreps  
Laboratory Manager

Enclosure: Invoice





## Chain of Custody/ Laboratory Analysis Request

DATE 2-8-73 PAGE 1 OF

30

SAMPLE ID	DATE	TIME	LAB ID	TYPE
1 950081	2-3-95	14:15	95-A260	SOIL
2				
3				
4				
5				
6				
7				
8				

CLIENT INFO	PROJECT
CONTACT	CHACO PLANT TRASH PIT SOIL
CHEMPRO DIVISION/GENERATOR NAME	EL PASO NATURAL GAS CO.
TELEPHONE #	FARMINGTON, NM
SAMPLERS NAME	LAB - (505) 599-2140
SAMPLERS SIGNATURE	NORMAN NORVELLE PHONE #599-2157
	Norman R. Norvelle

Relinquished By	Relinquished By
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time
Received By	Received By
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

Relinquished By	Relinquished By
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time
Received By	Received By
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

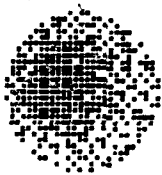
[illegible]

SPECIAL INSTRUCTIONS/COMMENTS.

\* called 2/10/95  
they want PCOS

#2331

Relinquished By	
Signature	
Printed Name	
Firm	
Date/Time	
Received By	
Signature	
Printed Name	
Firm	
Date/Time	



# BURLINGTON ENVIRONMENTAL

*A Philip Environmental Company*

February 20, 1995

John Lambdin  
El Paso Natural Gas Co.  
Field Services Lab  
P.O. Box 4990  
Farmington, NM 87499

Project: CHACO PLANT TRASH PIT SOIL  
Laboratory Job Number: 2331

On February 10 we received 1 sample(s).  
We performed the following analyses:

TCLP Metals  
PCB's  
Flash Closed Cup

Instrument: Hewlett Packard 5890 GC

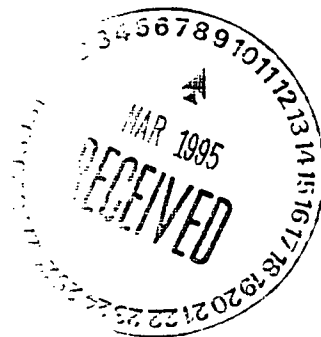
All samples were analyzed according to Methods specified in the work plan or Chain of Custody. Any deviations or exceptions to the standard methods are covered in Data Validation Notes.

All samples were extracted and analyzed within required holding times unless so noted.

Analysis and review was complete on February 20.

Sincerely,

Kathy Kreps  
Lab Manager  
(206) 227-6100  
Burlington Environmental Corporate Lab  
Washington Accreditation #C021



**BURLINGTON ENVIRONMENTAL INC.**  
**CORPORATE LABORATORY**  
**ANALYTICAL REPORT**

**Client:**

El Paso Natural Gas Co.  
Field Services Lab  
P.O. Box 4990  
Farmington, NM  
87499

Project Name: CHACO PLANT TRASH PIT SOI  
Report to: John Lambdin

Date Received: 2/10/95  
Date Sampled: 2/ 3/95  
Date Reported: 2/20/95

Laboratory No.: 95-A2061  
Sample ID.: 950081

Job Number: 2331

Analyte	Results	Units	Method	Analyst	Date	
TCLP METALS						<b>LIMIT</b>
TCLP Arsenic	< 0.10	mg/L	6010/200.7	EML	2/14/95	5.0
TCLP Barium	0.75	mg/L	6010/200.7	EML	2/14/95	100
TCLP Cadmium	< 0.005	mg/L	6010/200.7	EML	2/14/95	1.0
TCLP Chromium	< 0.010	mg/L	6010/200.7	EML	2/14/95	5.0
TCLP Lead	< 0.10	mg/L	6010/200.7	EML	2/14/95	5.0
TCLP Mercury	< 0.0008	mg/L	7470/3112	HY	2/15/95	0.20
TCLP Selenium	< 0.30	mg/L	6010/200.7	EML	2/14/95	1.0
TCLP Silver	< 0.010	mg/L	6010/200.7	EML	2/14/95	5.0

Method 1311      Date Extracted: 2/13/95      Sample Wt.: 100. grams

**PCBs**

Aroclor-1016	< 0.91	MG/KG	8081	ME	2/14/95
Aroclor-1221	< 0.91	MG/KG	8081	ME	2/14/95
Aroclor-1232	< 0.91	MG/KG	8081	ME	2/14/95
Aroclor-1242	< 0.91	MG/KG	8081	ME	2/14/95
Aroclor-1248	< 0.91	MG/KG	8081	ME	2/14/95
Aroclor-1254	< 0.91	MG/KG	8081	ME	2/14/95
Aroclor-1260	< 0.91	MG/KG	8081	ME	2/14/95
PCB Extraction					2/10/95

Surrogates	% Recovery	Limits
Tetrachloro-m-xylene	96.0	50.0-150.0
Decachlorobiphenyl	83.0	50.0-150.0

**MISCELLANEOUS**

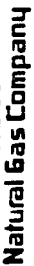
Flash Closed Cup	Comment	F	1020	RP	2/13/95
	NO FLASH				

*Reviewed & Approved by*  
*3-21-95*

Reviewed By :

*Kathy Drep*

2/20/95



## Page

10

White-Testing Laboratory	Yellow-EPNG Lab	Pink-Field Sampler	FM-08-0565 (8-1)
--------------------------	-----------------	--------------------	------------------



CHM -  
- Norman Norville

## FIELD SERVICES LABORATORY

### ANALYTICAL REPORT

~~WELL CLOSURE PROJECT - Soil Samples Inside the GWY 2000~~

#### SAMPLE IDENTIFICATION

SAMPLE NUMBER:

Field ID

Lab ID

MTR CODE | SITE NAME:

SAMPLE DATE | TIME (Hrs):

SAMPLED BY:

DATE OF TPH EXT. | ANAL.:

DATE OF BTEX EXT. | ANAL.:

TYPE | DESCRIPTION:

250087 KDW 2/9/95	950081
char. plant Trash Pit	N/A
2/3/95	1415
N/A	NORMAN NORVILLE
2/8/95	2/8/95
2/7/95	2/7/95

REMARKS:

#### RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	< 1.01	MG/KG	0.20234		493	20
TOLUENE	< 1.01	MG/KG				
ETHYL BENZENE	< 1.01	MG/KG				
TOTAL XYLENES	< 3.03	MG/KG				
TOTAL BTEX	< 6.06	MG/KG				
TPH (418.1)	73.7	MG/KG			1.98	28
HEADSPACE PID	Not Run	PPM				
PERCENT SOLIDS	95.2	%				

- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 -

Surrogate Recovery was at 87.2 % for this sample All QA/QC was acceptable.

Irritative:

Acceptable. JR

= Dilution Factor Used

Approved By:

John L. Lard

Date:

3-21-95

\*\*\*\*\*  
Test Method for  
Oil and Grease and Petroleum Hydrocarbons  
in Water and Soil  
Perkin-Elmer Model 1600 FT-IR  
Analysis Report  
\*\*\*\*\*

15/02/08 11:07

Sample Identification  
170021

Initial mass of sample, g

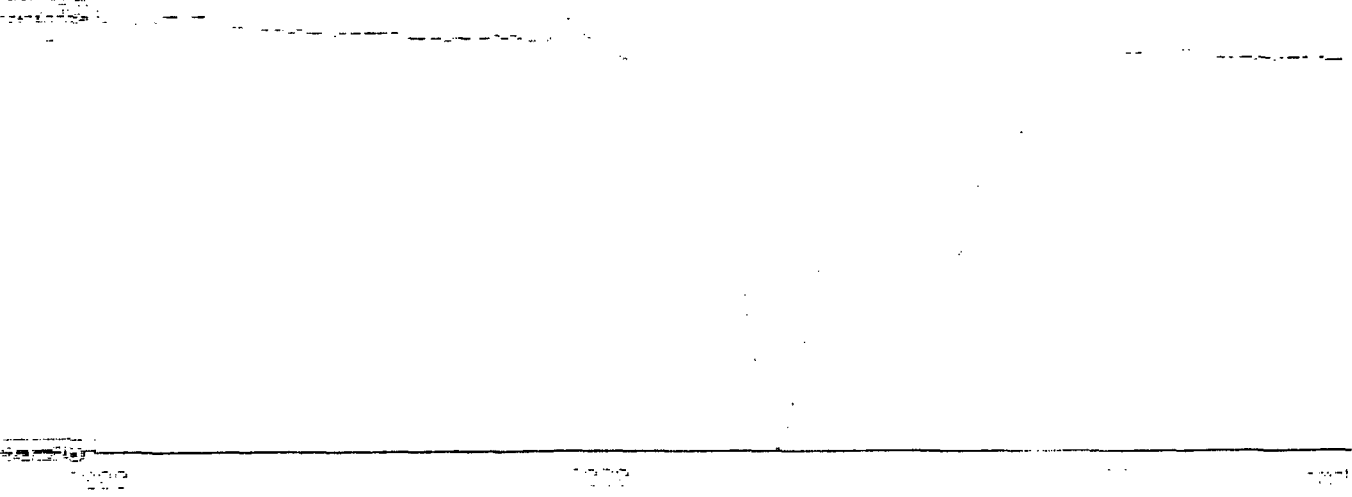
Volume of sample after extraction, ml  
10.00

Initial concentration, ppm

Final concentration of extract, ppm

IR Spectrum (transmission vs wavenumber)

11:07



Date of Analysis: February 8, 1995

19 Samples

## LABORATORY CONTROL SAMPLES: CALIBRATION CHECKS

SAMPLE ID	SOURCE	TRUE VALUE (PPM)	FOUND (MG/KG)	%R	ACCEPTABLE RANGE 75-125 %R YES NO
INITIAL CALIBRATION VERIF. 3" Heavy Oil (Lot M3G9616)	HORIBA	100	103	103	X

Narrative: Acceptable.

## LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT (S)MG/KG	DUPLICATE RESULT (D)MG/KG	RPD	ACCEPTABLE RANGE + / - 35% YES NO
946637	2nd Extract	481	388	21.4	X
946640	2nd Extract	411	469	13.2	X

Narrative: Acceptable.

## LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED (SA)MG/KG	SAMPLE RESULT (S)MG/KG	SPIKE SAMPLE RESULT (SR)MG/KG	%R	ACCEPTABLE RANGE 75-125 %R YES NO
946637	2830	481	3890	120	X
946640	3030	411	4040	120	X

Narrative: Acceptable.

## REFERENCE SOIL (Laboratory Control Sample):

SAMPLE ID	SOURCE	KNOWN VALUE (MG/KG)	SAMPLE RESULT FOUND (MG/KG)	MFG SPECIFIED RANGE	ACCEPTABLE YES NO
A TPH STANDARD #1 T # 91026	ENVIRONMENTAL RESOURCE ASS.	1340	1650	804 - 1680	X
A TPH STANDARD #2 w/int T # 91026	ENVIRONMENTAL RESOURCE ASS.	2590	3060	1550 - 3240	X

Narrative: Acceptable.

## LABORATORY REAGENT BLANK:

SAMPLE ID	SOURCE	TPH LEVEL (MG/KG)	STATUS
Freon Solvent	EPNG Lab	< 10.0	ACCEPTABLE
Reagent Blank	EPNG Lab	< 10.0	ACCEPTABLE

Narrative: Acceptable.

Approved By:

Date: 20-Feb-95

Extracted: 02/08/95

## LABORATORY CALIBRATION CHECKS, LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
					YES	NO
					RANGE	
ICV LA-41626 25 PPB						
Benzene	Standard	25.0	24.5	98.0	75 - 125 %	X
Toluene	Standard	25.0	29.2	116.8	75 - 125 %	X
Ethyl benzene	Standard	25.0	27.0	108.0	75 - 125 %	X
Total Xylenes	Standard	75.0	83.8	111.7	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
					YES	NO
					RANGE	
ICV LA-41626 200 PPB						
Benzene	Standard	200	215	107.5	75 - 125 %	X
Toluene	Standard	200	225	112.5	75 - 125 %	X
Ethyl benzene	Standard	200	217	108.5	75 - 125 %	X
m & p - Xylene	Standard	400	399	99.8	75 - 125 %	X
o - Xylene	Standard	200	215	107.5	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
					YES	NO
					RANGE	
LCS DB-00050 25 PPB						
Benzene	Standard	25.0	24.4	97.6	39 - 150	X
Toluene	Standard	25.0	29.8	119.2	46 - 148	X
Ethyl benzene	Standard	25.0	27.5	110.0	32 - 160	X
Total Xylenes	Standard	75.0	85.6	114.1	Not Given	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
					YES	NO
					RANGE	
CCV LA-41626 25 PPB						
Benzene	Standard	25.0	22.2	88.8	75 - 125 %	X
Toluene	Standard	25.0	26.5	106.0	75 - 125 %	X
Ethyl benzene	Standard	25.0	25.2	100.8	75 - 125 %	X
Total Xylenes	Standard	75.0	77.8	103.7	75 - 125 %	X

rrative: Acceptable.



SAMPLE NUMBER 946633 EXTRACT	TYPE (Analysis, Portion, or Sample)	SAMPLE RESULT PPM (mg/Kg)	DUPLICATE RESULT PPM (mg/Kg)	RPD	ACCEPTABLE	
					RANGE	YES NO
Benzene	2nd Portion	<1.01	<1.01	0	+/- 35 %	X
Toluene	2nd Portion	<1.01	<1.01	0	+/- 35 %	X
Ethyl benzene	2nd Portion	<1.01	<1.01	0	+/- 35 %	X
Total Xylenes	2nd Portion	<3.03	<3.03	0	+/- 35 %	X

rrative: Acceptable.

SAMPLE NUMBER 946634 EXTRACT	TYPE (Analysis, Portion, or Sample)	SAMPLE RESULT PPM (mg/Kg)	DUPLICATE RESULT PPM (mg/Kg)	RPD	ACCEPTABLE	
					RANGE	YES NO
Benzene	2nd Analysis	<1.00	<1.00	0	+/- 35 %	X
Toluene	2nd Analysis	<1.00	<1.00	0	+/- 35 %	X
Ethyl benzene	2nd Analysis	<1.00	<1.00	0	+/- 35 %	X
Total Xylenes	2nd Analysis	<3.00	<3.00	0	+/- 35 %	X

rrative: Acceptable.

#### LABORATORY SPIKES:

SAMPLE NUMBER 946631 EXTRACT - 2nd Analysis	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	XR	ACCEPTABLE	
					RANGE	YES NO
Benzene	40.0	<5.00	38.3	96	75 - 125 %	X
Toluene	40.0	<5.00	42.8	107	75 - 125 %	X
Ethyl benzene	40.0	<5.00	40.0	100	75 - 125 %	X
Total Xylenes	120.0	<15.0	124	103	75 - 125 %	X

rrative: Acceptable.

SAMPLE NUMBER 946629 EXTRACT - 2nd Portion	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	XR	ACCEPTABLE	
					RANGE	YES NO
Benzene	40.0	<5.00	38.4	96	75 - 125 %	X
Toluene	40.0	<5.00	42.7	107	75 - 125 %	X
Ethyl benzene	40.0	<5.00	41.6	104	75 - 125 %	X
Total Xylenes	120.0	<15.0	124	103	75 - 125 %	X

rrative: Acceptable.

#### DITIONAL ANALYTICAL BLANKS:

SAMPLE ID AUTO BLANK	SOURCE	PPB	STATUS
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

rrative: Acceptable

SAMPLE ID SOIL VIAL BLANK	SOURCE	PPB	STATUS
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<5.0	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

rrative: Acceptable.

SAMPLE ID EXTRACTION BLANK	SOURCE	PPB (In 200 uL shot)	STATUS
Benzene	Methanol	<2.5	ACCEPTABLE
Toluene	Methanol	<2.5	ACCEPTABLE
Ethyl benzene	Methanol	<2.5	ACCEPTABLE
Total Xylenes	Methanol	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID Carryover contamination checks	SOURCE	NARRATIVE	STATUS
1/4	Vial + Boiled Water	All analytical compounds <5.0 ppb	ACCEPTABLE
2/4	Vial + Boiled Water	All analytical compounds <5.0 ppb	ACCEPTABLE
3/4	Vial + Boiled Water	All analytical compounds <5.0 ppb	ACCEPTABLE
4/4	Vial + Boiled Water	All analytical compounds <5.0 ppb	ACCEPTABLE

Narrative: Acceptable.

REAGENT BLANKS:

SAMPLE ID BOILED WATER CHECK	SOURCE 1/31/95	PPB	STATUS
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable

SAMPLE ID METHANOL CHECK	SOURCE 1/31/95	PPB	STATUS
Benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Toluene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	MeOH/Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable

Approved By: John F. Kaden

Date: 8-Feb-95

## MEMORANDUM

---

**To:** John Lambdin /

**Date:** February 10, 1995

**From:** Norman R. Norvelle

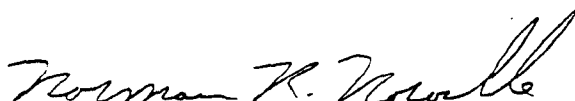
**Place:** Field Services Engineering Lab

**Subject:** Chaco Plant Solid Waste Pit Closure Sampling

On February 3, 1995 at 10:00 AM, I met with Denny Foutz of NMOCD to witness my sampling of the Chaco Plant solid waste trash pit for closure. We were accompanied by Patrick Marquez and Lyndell Smith. Mr. Foutz had me sample two points at the bottom of the pit at a depth of one foot and then composite the two samples. These were put into a 16 oz. jar, 8 Oz. jar and a 4 Oz. jar. An extra 8 Oz. jar was collected as a spare. The actual sample was taken at 2:15 PM. The assigned sample number was 950081. The following analysis was requested from BEI: ignitability, TCLP metals, and PCB. Our lab performed the TPH and BETX analysis.

The sample was iced in a cooler until received in the lab and then stored in the sample refrigerator. On 2-9-95, the sample was packed in bubble wrap, iced and ship in a cooler to the BEI labs in Seattle. A temperature blank was included. The appropriate paper work is attached.

Mr. Foutz then performed an audit and plant tour of Chaco Plant. He was accomplished by Patrick Marquez, Lyndell Smith, and one of the plant leads.

  
Norman R. Norvelle, Senior Division Chemist

attachments

cc: David Hall

Patrick Marquez

# Laboratory Analysis Request

DATE 2-8-95 PAGE 1

30

[illegible]

ANALYSIS REQUESTED		OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
BASE NEUTRAL ORGANICS	GC/MS 825 8270	<p>Isot. 16.1175</p> <p>DISCHARGE TESTING</p> <p>PCB 608/808C</p> <p>PCB 608/808C</p> <p>PCB 608/808C</p> <p>PCB 608/808C</p> <p>PCB 608/808C</p> <p>PCB 608/808C</p> <p>PCB 608/808C</p> <p>PCB 608/808C</p> <p>PCB 608/808C</p>	3	
VOLATILE ORGANICS	GC/MS 824/8240			
PCBs	608/808C			
TPH (Total Petroleum Hydrocarbons)	418 107 6015			
BETX (Benzene, Ethylbenzene, Toluene, Xylenes)	8240 107 6020			
F-LISTED SOLVENTS	8240 107 6020			
TCF (Total Chlorinated Fuels)	1311 8240			
TCF METALS	D004...			
METALS TOTAL	As, Ba, Cd, Cr, Cu, Pb, Ni, Hg, Ag, Se, Th, So, Zn			
TCF ORGANICS (Specify Method)	PCB 608/808C			

SPECIAL INSTRUCTIONS/COMMENTS:

Relinquished By	Relinquished By
Signature	Signature
Printed Name	Printed Name
Title	Title
Date/Time	Date/Time
Received By	Received By
Signature	Signature
Printed Name	Printed Name
Title	Title
Date/Time	Date/Time

**DISTRIBUTION** WHITE return to originator, YELL OW Lab. PHUK - returned by originator





STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

ANITA LOCKWOOD  
CABINET SECRETARY

November 22, 1994

**CERTIFIED MAIL**

**RETURN RECEIPT NO. P-667-242-177**

Mr. Patrick Marquez  
Compliance Engineer  
El Paso Natural Gas Company  
P.O. Box 4990  
Farmington, New Mexico 87499

*Sohr, can we make  
arrangements for sampling  
& Testing?*

*Thanks  
PSh.*

**RE: SOLID WASTE PIT CLOSURES  
ANGEL PEAK COMPRESSOR STATION AND CHACO GAS PLANT  
SAN JUAN COUNTY, NEW MEXICO**

Dear Ms. Miller:

The New Mexico Oil Conservation Division (OCD) has reviewed El Paso Natural Gas Company's (EPNG) September 12, 1994 "SOLID WASTE PIT CLOSURES AT EPNG'S ANGEL PEAK AND CHACO FACILITIES". This document contains EPNG's proposed closure plan for closure of former solid waste pits at EPNG's Angel Peak Compressor Station and Chaco Gas Plant.

The proposed closure plan as contained in the above referenced document is approved with the following conditions:

1. In addition to the soil sampling proposed, EPNG will analyze samples from the pits for hazardous waste characteristics.
2. All sample analyses will be conducted using EPA approved laboratory methods.
3. The results of the analytical sampling will be submitted to the OCD for approval prior to actual closure of the pits.
4. EPNG will notify the OCD at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples.
5. All original documents will be submitted to the OCD Santa Fe Office with copies provided to the OCD Aztec Office.



MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time

1:34 pm

Date

3-13-95

Originating Party

Other Parties

Pat Sanchez - called  
Patrick Marquez

Subject

LTT'R rec. from EPNIG dated Feb. 22, 1995

"Approval for construction & OP of Add. Septic System

Discussion

Septic system - will only contain  
sewage, No other waste streams,  
Told him that it would fall under  
NMED Jurisdiction.

Conclusions or Agreements

Signature

Signed

*Patrick W. Marquez*



RECEIVED  
FEB 22 1995  
95 FEB 7 11 18 52

P. O. BOX 4990  
FARMINGTON, NEW MEXICO 87499

Mr. David Tomko  
New Mexico Environment Department  
724 W. Animas  
Farmington, NM 87401

February 22, 1995

**Subject: Approval for Construction and Operation of Additional Septic System at EPNG's Chaco Plant.**

Dear Mr. Tomko:

El Paso Natural Gas Company (EPNG) request approval for the septic system described below. The septic system will be installed to accommodate construction crews during and perhaps beyond the construction of new facilities at Chaco Plant.

- Chaco Plant: SW/4, Section 26, T-26-N & R-12-W
- Potable water will be piped from the existing water system within the plant to two construction trailers. Each trailer will have one toilet and one sink. This waste stream will be isolated from all others.
- One septic tank with 420± gallon/day capacity to service both trailers. The septic tank will discharge to a leach field (See enclosed map for piping layout).
- Taft Construction, licensed in the State of New Mexico, will install the system.
- The system will be in operation until new construction is complete, approximately one year. Upon completion, Chaco Plant personnel will evaluate the future need for the septic system. The decision to remove or keep the system will be forwarded to NMED and NMOCD along with the "as built" drawings.

El Paso Natural Gas Company respectfully request approval to construct and operate the temporary septic system at Chaco Plant. Construction of the system will begin immediately after NMED approval, therefor, your earliest response is appreciated. Should you require further information, please do not hesitate to call at 505 599 2175.

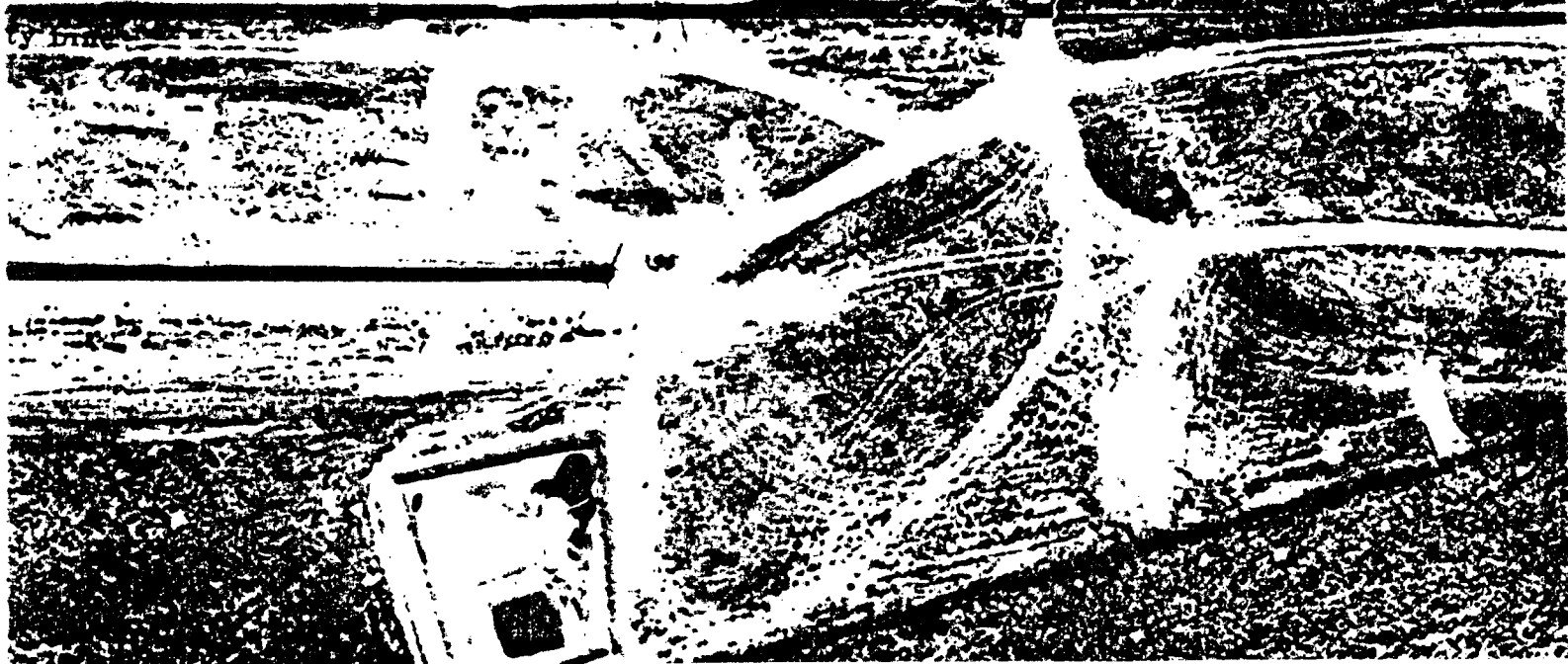
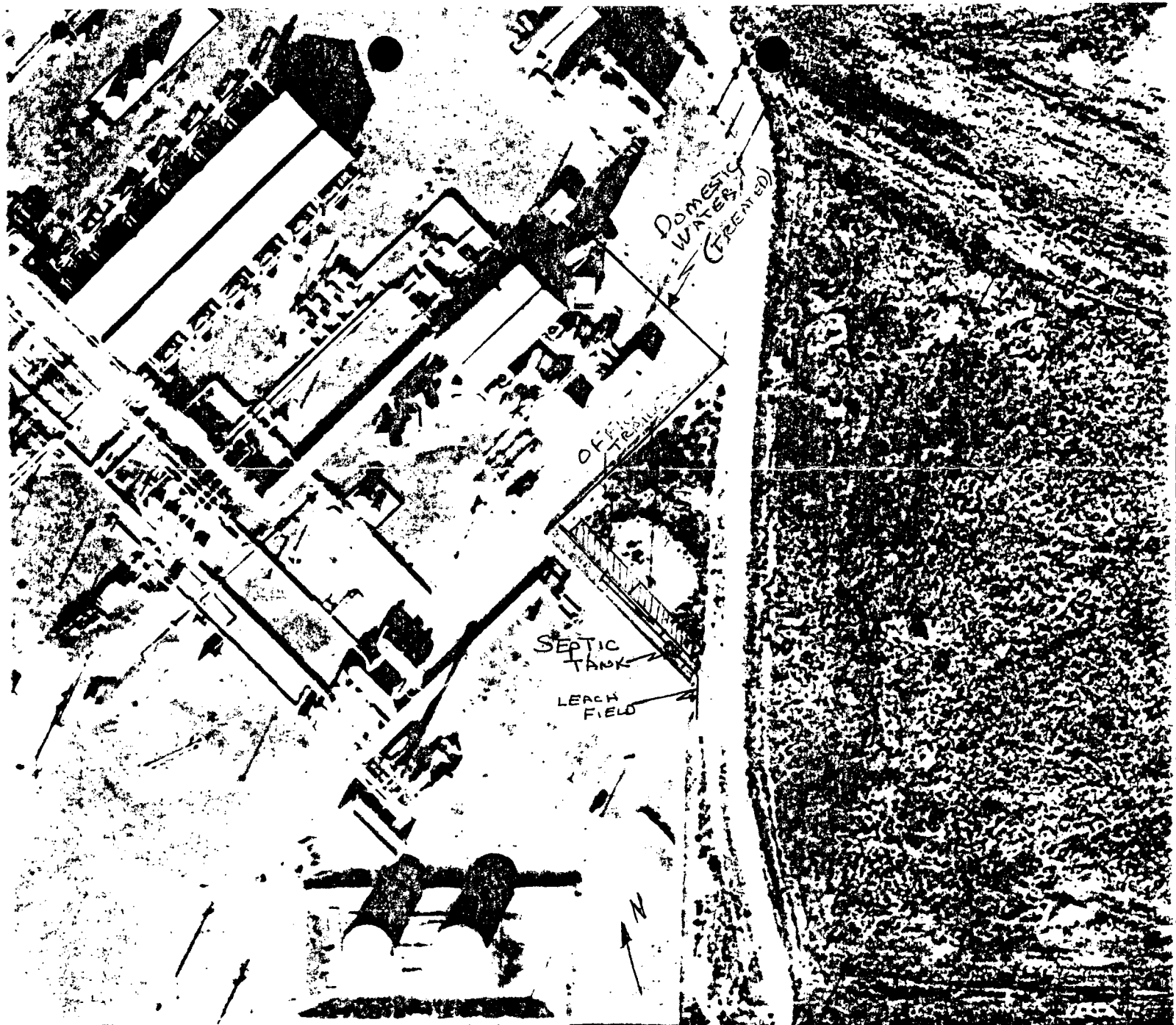
Thank you,

*P. S. Marquez*  
Patrick Marquez  
Compliance Engineer

cc:

David Hall (EPNG)  
Kent Leidy (EPNG)  
William Olson (NMOCD)  
Lyndell Smith (EPNG)  
Bob Yungert (EPNG)  
Sandra Miller/David Bays/File: 5212 Chaco (Regulatory)





State of New Mexico  
**ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT**  
Santa Fe, New Mexico 87505



February 15, 1995

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-176-012-110**

Ms. Sandra Miller  
El Paso Natural Gas Company  
P.O. Box 4990  
Farmington, New Mexico 87499

**Re: Discharge Plan (GW-71)**  
**Chaco Gas Plant**  
**San Juan County, New Mexico**

Dear Ms. Miller:

The Oil Conservation Division (OCD) has received El Paso Natural Gas Company's (EPNG) request, dated February 8, 1995, for approval to provide wastewater to local entities wanting to use the water for: 1) drilling oil and/or natural gas wells, and 2) the San Juan County road departments use in dust suppression on dirt roads. Based upon the information provided, your disposal request is approved under the following conditions:

1. Only noncontact wastewater from the Chaco Plant will be provided to the above requested entities.
2. If water is to be used for road spreading to suppress dust, EPNG must receive approval from the OCD-Aztec Office on a case by case basis.
3. Use of the wastewater in the oil and natural gas industry is limited to exploration and production activities.
4. EPNG will maintain records of those entities that receive the water, the volume of water provided, date provided, intended use of the water and final disposition of the water. EPNG will provide the OCD a copy of the records February 1st of each year with the first report due no later than February 1, 1996.
5. The wastewater may not be discharged into any waters of the United States or within one hundred feet (100') from the nearest natural boundary of any wash or arroyo.

**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  
Oil Conservation  
827-7131

Ms. Sandra Miller  
February 14, 1995

Please be advised that this approval does not relieve you of liability should your operation result in actual pollution of surface or groundwater or the environment actionable under other laws and/or regulations. In addition, OCD approval does not relieve you of responsibility for compliance with any other federal, state or local laws and/or regulations.

If you have any questions, please do not hesitate to call me at (505) 827-7153.

Sincerely,

A handwritten signature in cursive script, appearing to read "Chris Eustice".

Chris E. Eustice  
Environmental Geologist

xc: OCD - Aztec Office

February 8, 1995

Mr. Chris Eustice  
New Mexico Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, NM 87504

**RECEIVED**

**FEB 13 1995**

Environmental Bureau  
Oil Conservation Division

Dear Mr. Eustice:

El Paso Natural Gas Co. (EPNG) is periodically requested to provide water to local entities from our noncontact wastewater pond at Chaco Plant. The requests typically come from two types of companies: 1) drilling companies for use in oil and gas well production, and 2) the county road department for use in dust suppression on dirt roads.

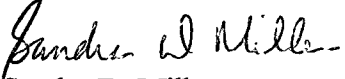
EPNG requests approval of a minor revision to Chaco Plant's discharge plan GW-71 in order to accommodate these type requests. For your information, I have listed below several items which are relevant to this request:

- Chaco Plant noncontact wastewater was sampled in 1991 and 1993 for BETX, heavy metals, and total dissolved solids (TDS). In each case, the BETX levels were nondetectable, the heavy metals were below WQCC standards, and the TDS was 1550 mg/l and 1356 mg/l, respectively.
- The discharge quality to the noncontact wastewater ponds has not changed significantly since the last sampling events took place.
- EPNG will maintain a log of those entities which take water from the pond and will provide NMOCD a copy of the log on an annual basis.
- EPNG will require that any entity using water from the Chaco Plant pond agree, in writing, to the following stipulations as applicable:
  1. Chaco Plant personnel are notified prior to a company obtaining wastewater from the pond.
  2. Use of the wastewater is limited to use in oil and natural gas exploration and production activities. (i.e. not water wells)
  3. The wastewater is not discharged into waters of the U.S.
  4. The wastewater is not discharged within 100' from the nearest natural boundary of any wash or arroyo.
  5. The wastewater is never applied so as to allow ponding or pooling of water along roads.

6. The wastewater is limited to the road surface and never applied, allowing runoff of water beyond the road boundaries.

If you have any questions regarding this modification, you may reach me at 599-2141.

Sincerely,



Sandra D. Miller

Superintendent, Environmental Compliance

xc: Mr. Denny Foust, NMOCD - Aztec  
Mr. W.D. Hall, EPNG



DIVISION  
8 52

Mr. Bill Olson  
New Mexico Oil Conservation Division  
2040 South Pacheco Street  
Santa Fe, NM 87504

February 1, 1995

**Subject: Closure Report - Chaco Plant Industrial Ponds and Flare Pit**

Dear Mr. Olson:

El Paso Field Services (EPFS) has completed the closure of the subject ponds. This summary of the closure activities is presented to you as a condition of the Closure Plan approval dated November 17th, 1995.

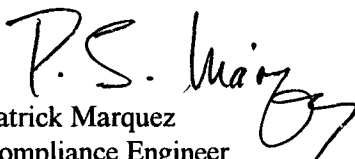
Closure activities began on or about December 2nd and continued for approximately one month. Each pond berm was broken allowing heavy equipment to mix fill earth and manure with the pond contents until the pond area was stabilized. The pond berms were cut and used as fill, leaving the area sloping gently northward to capture any stormwater against the existing plant berm. Clay from a nearby EPFS facility was imported to fashion a six to eight inch clay cap for the entire area. In short, the work followed the closure plan and was successful. NMOCD representative, Mr. Denny Foust, visited the site on two separate occasions to witness these activities.

EPFS has recently sampled monitor wells 1 and 8 (8b in all previous documents) to confirm the data presented to your office in November and to provide some basis for further delineation of the perched aquifer quality. Table 1 shows MW8's initial quality (submitted with the Closure Plan) while Table 2 shows two additional analyses for MW8 and a recent analysis of MW1.

As shown, the water quality from MW1 is consistent with previous analyses while the MW8 quality has improved. EPFS proposes increasing the sampling frequency for monitor wells 1 and 8 to bimonthly (every two months) for BTEX and continuing semi annual analyses for BTEX, PNA's, Cd, Cr and Hg as instructed (NMOCD to EPNG - Nov. 17th, 1995). This should allow EPFS to further establish ground water quality at the site. EPFS shall report these analyses to your office with the Annual Ground Water Quality Report in October, 1996 with a work plan for further delineation of ground water quality if necessary.

Please consider this course of action. You may contact me at 505-599-2175 if you require further information. Your assistance and timely response to EPFS's requests last year are appreciated.

Thank you,

  
Patrick Marquez  
Compliance Engineer

cc:

Denny Foust (NMOCD)  
Sandra Miller/David Bays/File: 5212 Regulatory

## Monitor Well 8b

## Chaco Plant

11/16/95

			<b>Monitor Well 8b</b>					
			Sample #951068					
			Report to NMOCD 11/16/95					
<b>Total Metals</b>	<b>Result</b>	<b>Units</b>	<b>Polynuclear Aromatics</b>	<b>Result</b>	<b>Units</b>	<b>Cations/Anions</b>	<b>Result</b>	<b>Units</b>
Aluminum	2.8	mg/l	Naphthalene	ND	ug/L	pH	8.02	umhos
Arsenic	0.05	mg/l	Acenaphthylene	ND	ug/L	Alkalinity as CO3	0	ppm
Barium	0.1	mg/l	1-Methylnaphthalene	10.5	ug/L	Alkalinity as HCO3	780	ppm
Boron	0.4	mg/l	2-Methylnaphthalene	6J	ug/L	Calcium as Ca	13	ppm
Cadmium	ND	mg/l	Acenaphthene	ND	ug/L	Magnesium and Mg	4	ppm
Chromium	ND	mg/l	Fluorene	3.6	ug/L	Total Hardness as CaCO3	49	ppm
Cobalt	ND	mg/l	Phenanthrene	ND	ug/L	Chloride as Cl	158	ppm
Copper	ND	mg/l	Anthracene	ND	ug/L	Sulfate as SO4	289	ppm
Iron	2.2	mg/l	Fluoranthene	ND	ug/L	Fluoride as F	2.2	ppm
Lead	ND	mg/l	Pyrene	ND	ug/L	Potassium as K	0.65	ppm
Manganese	0.25	mg/l	Benzo(a)anthracene	ND	ug/L	Sodium	553	ppm
Mercury	ND	mg/l	Chrysene	ND	ug/L	Total dissolved Solids	1424	ppm
Molybdenum	ND	mg/l	Benzo(b)fluoranthene	ND	ug/L	Conductivity	2280	umhos
Nickel	ND	mg/l	Benzo(a)fluoranthene	ND	ug/L	Nitrate as NO3-N	<0.1	ppm
Selenium	ND	mg/l	Benzo(a)pyrene	ND	ug/L	Phosphate as PO4	4.2	ppm
Silver	ND	mg/l	Dibenzo(a,h)anthracene	ND	ug/L			
Zinc	0.07	mg/l	Benzo(g,h,i)perylene	ND	ug/L			
<b>BTEX (8020)</b>			Indeno(1,2,3-c,d)pyrene	ND	ug/L			
Benzene	29.5	ppb						
Toluene	<2.5	ppb						
Ethyl Benzene	<2.5	ppb						
Total Xylenes	<7.5	ppb						
ND = Not Detected								
J = Estimate value. Below requested detection limits								

Table 1

**Monitor Wells 1 and 8  
Chaco Plant Pond Closures  
Closure Report 02/02/96  
BTEX (8020)**

<b>Analyte/Date</b>	<b>MW 8</b>	<b>MW 8</b>	<b>MW 8</b>	<b>Units</b>	<b>MW 1</b>
	<b>Nov. 16,1995</b>	<b>Nov. 30, 1995</b>	<b>Jan. 30, 1996</b>		<b>Jan. 30, 1996</b>
Benzene	29.5	9.1	5.3	ppb	< 2.5
Toluene	< 2.5	< 2.5	< 2.5	ppb	< 2.5
Ethyl Benzene	< 2.5	< 2.5	< 2.5	ppb	< 2.5
Total Xylenes	< 7.5	< 7.5	< 7.5	ppb	< 7.5

Table 2





**FIELD SERVICES LABORATORY  
ANALYTICAL REPORT**

---

**SAMPLE IDENTIFICATION**

---

**SAMPLE NUMBER:** 951295  
**MATRIX:** Water  
**SAMPLE DATE:** 29-Nov-95  
**SAMPLE TIME (Hrs.):** 1452  
**SAMPLED BY:** Dennis Bird  
**PROJECT:** Monitor Well Sampling  
**FACILITY ID:** 5212  
**SAMPLE LOCATION:** Chaco Plant  
**SAMPLE POINT:** Monitor Well #8  
**DATE OF ANALYSIS:** 30-Nov-95

**REMARKS:** None.

---

**EPA Method 8020 (BTEX) RESULTS**

---

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	9.1	None	10
TOLUENE	<2.5	None	740
ETHYL BENZENE	<2.5	None	750
TOTAL XYLENES	<7.5	None	620
SURROGATE % RECOVERY	93	Allowed Range 80 to 120 %	

**NOTES:**

Acceptable Quality Control.

Approved By: \_\_\_\_\_

A handwritten signature in cursive script, appearing to read 'John Zetche', written over a horizontal line.

4-Dec-95

Date



CHAIN OF CUSTODY RECORD

Project No.		Project Name		Total No. of Containers		Chain of Custody Seals		Intact?		Requested Analysis		Contract Laboratory															
Samplers: (Signature)		Date		Receiving Temp. (°F)		Composite or Grab		See Attached		Remarks																	
Lab ID	Date	Time	Matrix	Sample Number																							
	11-29-95	1452	WATER	951295		G		X		MONITOR WELL MW-8																	
	11-29-95	--	WATER			G		X		TRIP BLANK																	
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Relinquished by: (Signature)		Date/Time		Received by: (Signature)																	
Dennis Bird		11-29-95 1610																									
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Relinquished by: (Signature)		Date/Time		Received by: (Signature)																	
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)		Relinquished by: (Signature)		Date/Time		Remarks:																	
				Dennis Bird				11/29/95 16:30																			
Results & Invoices to:														Charge Code		Date Results Reported / by: (Signature)											

# EL PASO NATURAL GAS - FIELD SERVICES LAB

## QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 951295

QA/QC for 11/30/95 Sample Set

### LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
ICV LA-52589 50 PPB					YES	NO
					RANGE	
Benzene	Standard	50.0	54.6	109.2	75 - 125 %	X
Toluene	Standard	50.0	55.3	110.6	75 - 125 %	X
Ethyl benzene	Standard	50.0	56.2	112.4	75 - 125 %	X
m & p - Xylene	Standard	100	108.9	108.9	75 - 125 %	X
o - Xylene	Standard	50.0	56.8	113.6	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
LCS LA-45476 25 PPB					YES	NO
					RANGE	
Benzene	Standard	25.0	30.0	120.0	39 - 150	X
Toluene	Standard	25.0	30.2	120.8	46 - 148	X
Ethyl benzene	Standard	25.0	29.4	117.6	32 - 160	X
m & p - Xylene	Standard	50	57.1	114.2	Not Given	X
o - Xylene	Standard	25.0	29.8	119.2	Not Given	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
CCV LA-52589 50 PPB					YES	NO
					RANGE	
Benzene	Standard	50.0	51.4	102.8	75 - 125 %	X
Toluene	Standard	50.0	51.9	103.8	75 - 125 %	X
Ethyl benzene	Standard	50.0	52.7	105.4	75 - 125 %	X
m & p - Xylene	Standard	100	101.7	101.7	75 - 125 %	X
o - Xylene	Standard	50.0	53.0	106.0	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	XR	ACCEPTABLE	
CCV LA-52589 50 PPB					YES	NO
					RANGE	
Benzene	Standard	50.0	49.2	98.4	75 - 125 %	NA
Toluene	Standard	50.0	49.3	98.6	75 - 125 %	NA
Ethyl benzene	Standard	50.0	50.0	100.0	75 - 125 %	NA
m & p - Xylene	Standard	100	95.7	95.7	75 - 125 %	NA
o - Xylene	Standard	50.0	50.5	101.0	75 - 125 %	NA

Narrative: Acceptable.

# EL PASO NATURAL GAS - FIELD SERVICES LAB

QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 951295

## LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
947799					RANGE	
Benzene	Matrix Duplicate	9.1	9.0	1	+/- 20 %	X
Toluene	Matrix Duplicate	<2.5	<2.5	0	+/- 20 %	X
Ethyl benzene	Matrix Duplicate	<2.5	<2.5	0	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<5.0	<2.5	0	+/- 20 %	X
o - Xylene	Matrix Duplicate	<2.5	<2.5	0	+/- 20 %	X

Narrative: Acceptable.

## LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	XR	ACCEPTABLE	
					YES	NO
2nd Analysis 947799					RANGE	
Benzene	50	9.1	57.5	96.8	75 - 125 %	X
Toluene	50	<2.5	50.3	100.6	75 - 125 %	X
Ethyl benzene	50	<2.5	51.9	103.8	75 - 125 %	X
m & p - Xylene	100	<5.0	98.8	98.8	75 - 125 %	X
o - Xylene	50	<2.5	51.6	103.2	75 - 125 %	X

Narrative: Acceptable.

## ADDITIONAL ANALYTICAL BLANKS:

AUTO BLANK	SOURCE	PPB	STATUS
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SOIL VIAL BLANK	SOURCE	PPB	STATUS
	Lot M12151 A5		
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB (None analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<2.5	NA
Toluene	Vial + Boiled Water	<2.5	NA
Ethyl benzene	Vial + Boiled Water	<2.5	NA
Total Xylenes	Vial + Boiled Water	<7.5	NA

Narrative:

Approved By: 

Date: 1-Dec-95



**EL PASO FIELD SERVICES**  
**FIELD SERVICES LABORATORY**  
**ANALYTICAL REPORT**

---

**SAMPLE IDENTIFICATION**

---

**SAMPLE NUMBER:** 960063  
**MATRIX:** Water  
**SAMPLE DATE:** 30-Jan-96  
**SAMPLE TIME (Hrs.):** 1122  
**SAMPLED BY:** Dennis Bird  
**PROJECT:** Monitor Well Sampling  
**FACILITY ID:** 5212  
**SAMPLE LOCATION:** Chaco Plant  
**SAMPLE POINT:** Monitor Well #8  
**DATE OF ANALYSIS:** 30-Jan-96

**REMARKS:** None.

---

**EPA Method 8020 (BTEX) RESULTS**

---

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	5.3	None	10
TOLUENE	<2.5	None	740
ETHYL BENZENE	<2.5	None	750
TOTAL XYLENES	<7.5	None	620
SURROGATE % RECOVERY	91	Allowed Range 80 to 120 %	

**NOTES:**

Acceptable Quality Control.

Approved By: \_\_\_\_\_

31-Jan-96

Date



**EL PASO FIELD SERVICES**  
**FIELD SERVICES LABORATORY**  
**ANALYTICAL REPORT**

---

**SAMPLE IDENTIFICATION**

---

**SAMPLE NUMBER:** 960064  
**MATRIX:** Water  
**SAMPLE DATE:** 30-Jan-96  
**SAMPLE TIME (Hrs.):** 1133  
**SAMPLED BY:** Dennis Bird  
**PROJECT:** Monitor Well Sampling  
**FACILITY ID:** 5212  
**SAMPLE LOCATION:** Chaco Plant  
**SAMPLE POINT:** Monitor Well #1  
**DATE OF ANALYSIS:** 30-Jan-96

**REMARKS:** None.

---

**EPA Method 8020 (BTEX) RESULTS**

---

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	<2.5	None	10
TOLUENE	<2.5	None	740
ETHYL BENZENE	<2.5	None	750
TOTAL XYLENES	<7.5	None	620
SURROGATE % RECOVERY	104	Allowed Range 80 to 120 %	

**NOTES:**

Acceptable Quality Control.

Approved By: \_\_\_\_\_

31-Jan-96  
Date

# EL PASO NATURAL GAS - FIELD SERVICES LAB

QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 960063 and 960064

QA/QC for 01/30/96 Sample Set

## LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
ICV LA-52589					YES	NO
50 PPB					RANGE	
Benzene	Standard	50.0	49.9	99.8	75 - 125 %	X
Toluene	Standard	50.0	50.4	100.8	75 - 125 %	X
Ethyl benzene	Standard	50.0	50.6	101.2	75 - 125 %	X
m & p - Xylene	Standard	100	98.1	98.1	75 - 125 %	X
o - Xylene	Standard	50.0	50.8	101.6	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
LCS LA-45476					YES	NO
25 PPB					RANGE	
Benzene	Standard	25.0	26.5	106.0	39 - 150	X
Toluene	Standard	25.0	26.5	106.0	46 - 148	X
Ethyl benzene	Standard	25.0	26.8	107.2	32 - 160	X
m & p - Xylene	Standard	50	51.0	102.0	Not Given	X
o - Xylene	Standard	25.0	27.0	108.0	Not Given	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
CCV LA-52589					YES	NO
50 PPB					RANGE	
Benzene	Standard	50.0	50.4	100.8	75 - 125 %	X
Toluene	Standard	50.0	50.7	101.4	75 - 125 %	X
Ethyl benzene	Standard	50.0	51.2	102.4	75 - 125 %	X
m & p - Xylene	Standard	100	98.6	98.6	75 - 125 %	X
o - Xylene	Standard	50.0	51.7	103.4	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
CCV LA-52589					YES	NO
50 PPB					RANGE	
Benzene	Standard	50.0		0.0	75 - 125 %	
Toluene	Standard	50.0		0.0	75 - 125 %	
Ethyl benzene	Standard	50.0		0.0	75 - 125 %	
m & p - Xylene	Standard	100		0.0	75 - 125 %	
o - Xylene	Standard	50.0		0.0	75 - 125 %	

Narrative: Acceptable.

# EL PASO NATURAL GAS - FIELD SERVICES LAB

QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 960063 and 960064

## LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
960063					RANGE	
Benzene	Matrix Duplicate	5.39	5.35	1	+/- 20 %	X
Toluene	Matrix Duplicate	<2.5	<2.5	0	+/- 20 %	X
Ethyl benzene	Matrix Duplicate	<2.5	<2.5	0	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<5.0	<5.0	0	+/- 20 %	X
o - Xylene	Matrix Duplicate	<2.5	<2.5	0	+/- 20 %	X

Narrative: Acceptable.

## LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	XR	ACCEPTABLE	
					YES	NO
2nd Analysis 960063					RANGE	
Benzene	50	5.39	52.3	93.8	75 - 125 %	X
Toluene	50	<2.5	48.5	97.0	75 - 125 %	X
Ethyl benzene	50	<2.5	49.5	99.0	75 - 125 %	X
m & p - Xylene	100	<5.0	95	94.5	75 - 125 %	X
o - Xylene	50	<2.5	48.8	97.6	75 - 125 %	X

Narrative: Acceptable.

## ADDITIONAL ANALYTICAL BLANKS:

AUTO BLANK	SOURCE	PPB	STATUS
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SOIL VIAL BLANK	SOURCE	PPB	STATUS
	Lot N12151 A9	(Analyzed with this set)	
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB	STATUS
		(None analyzed with this set)	
Benzene	Vial + Boiled Water	<2.5	NA
Toluene	Vial + Boiled Water	<2.5	NA
Ethyl benzene	Vial + Boiled Water	<2.5	NA
Total Xylenes	Vial + Boiled Water	<7.5	NA

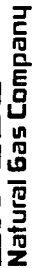
Narrative:

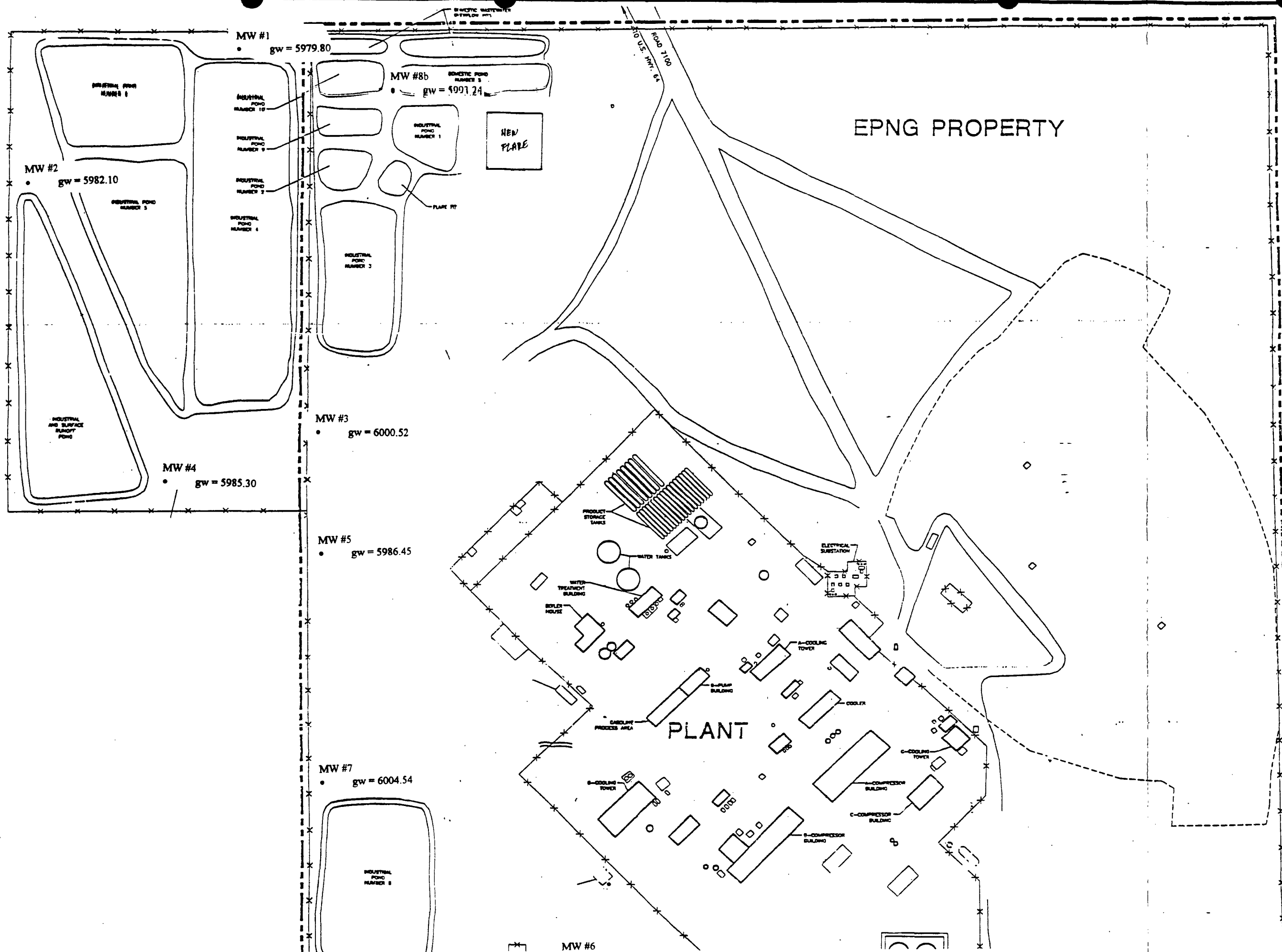
Approved By:

*John L. L...*

Date: 31-Jan-96



[illegible]



B: 11 01sm  
OIL CONSERVATION DIVISION  
RECEIVED

'95 JAN 17 AM 8 52

January 11, 1995

ENVIRONMENTAL NOTES: Denny Foust

RE: Sampling for Closure of Solid Waste Pit EPNG Chaco Plant

Norman Norvelle, EPNG and Denny Foust, OCD were to sample solid waste pit at Chaco Plant as proposed by Patrick Marquez EPNG September 12, 1995 and approved by OCD. The pit at Chaco Plant was active with new trash, from construction, operations and personnel in the pit. We could not reach the bottom of the pit to obtain samples plus the pit continues to be active.