GW-071

CLOSURE PLAN

South Lined Contact Water Pond

DATE:

September 14, 2010

CLOSURE PLAN
SOUTH LINED CONTACT WATER POND
OCD Discharge Plan (GW-071)

Property:

CHACO GAS PLANT
895 County Road 7100
Section 16, Township 26N, Range 12W
San Juan County, New Mexico

September 14, 2010
SWG Project No. 0410001B

Prepared for:

Enterprise Field Services, L.L.C.
PO Box 4324
Houston, Texas 77210
Attn: Mr. David R. Smith, P.G.

Prepared by:

Kyle Summers, C.P.G.
Senior Geologist/
Manager, Four Corners Office

B. Chris Mitchell, P.G.
Principal Geoscientist

Southwest GEOSCIENCE
549 E. Zia Street
Aztec, NM 87410
Ph: (505) 334-5200
Fax: (505) 334-5204

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CLOSURE PLAN for SOUTH LINED CONTACT WATER POND OCD Discharge Permit (GW-071)

CHACO GAS PLANT
895 County Road 7100
Section 16, Township 26N, Range 12W
San Juan County, New Mexico

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1.0 EXECUTIVE SUMMARY

The Enterprise Field Services, L.L.C. (Enterprise) Chaco Gas Plant consists of approximately 190-acres of land developed with a cryogenic gas plant, amine treatment unit and natural gas compression facilities, referred to hereinafter as the "Site" or "subject Site". The Site is located at 895 County Road (CR) 7100 in Section 16, Township 26N, Range 12W in San Juan County, New Mexico, approximately 17.5 miles south of Farmington.

This closure plan for the South Lined Contact Water Pond (South Pond) is submitted in accordance with the New Mexico Energy, Minerals and Natural Resource Department, Oil Conservation Division (OCD) Groundwater Discharge Plan (GW-071) inspection on June 11, 2009. In addition to other findings at the facility, the inspection requested the development and submittal of a plan for closure of the South Lined Discharge Pond. Enterprise responded in correspondence dated September 1, 2009 that a closure plan would be submitted to the OCD, and closure of the pond would be scheduled during 2010.

Two (2) lined contact water evaporation ponds, referred to hereinafter as the "North Pond" and "South Pond", were constructed at the Site in 1994 for the disposal of petroleum contact water generated during natural gas processing operations at the Site. The North Pond and South Pond failed integrity testing performed in 1995. Enterprise successfully repaired the South Pond liner, but the North Pond liner failed testing again in 1997. A new liner was installed in the North Pond in 1998 and again failed the subsequent integrity testing. The lined contact water ponds were subsequently removed from service in 1999, and petroleum contact water has since been transported off-site for disposal. The North Pond was physically reclaimed during early 2000.

Ten (10) soil borings/monitoring wells have been previously installed at the Site. The lithologies encountered during the advancement of soil borings which were historically completed at the Site included a brown sand with silt and clay from the surface to a depth of approximately 25 feet below ground surface (bgs). Groundwater was encountered at depths ranging from 4 to 25 feet bgs during the installation of the monitoring wells.

To further evaluate the presence of contaminants in groundwater and the geochemistry of the initial groundwater-bearing unit at the Site, at least one (1) additional groundwater monitoring event will be completed at the Site. During the proposed groundwater monitoring event, a groundwater sample will be collected and analyzed from each monitoring well utilizing low-flow sampling techniques. The utilization of low-flow minimal drawdown techniques enables the isolation of the

screened interval in the well such that the groundwater recovered is drawn directly from the formation with little mixing of casing water or disturbance to the sampling zone. The groundwater samples will be collected from each monitoring well once produced groundwater is consistent in color, clarity, pH, dissolved oxygen (DO), oxidation/reduction potential (ORP), temperature and conductivity.

The groundwater samples collected from the monitoring wells will be analyzed for select cations/anions (calcium, magnesium, chloride, sulfates, fluoride, nitrates, potassium and sodium), phosphates and total dissolved solids (TDS). In addition, the groundwater samples collected from monitoring wells MW-8b, MW-9 and MW-10 will be analyzed for total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO) and benzene, toluene, ethylbenzene and xylenes (BTEX), to further evaluate the presence and/or magnitude of petroleum hydrocarbon constituents as a result of the historic use of the unlined flare pit, industrial ponds #1 and #2 and contact water ponds.

The proposed closure activities include the removal of the lined contact water South Pond located on the northwest portion of the Site in accordance with the OCD request in the OCD *Discharge Permit Renewal* correspondence dated July 14, 2009. The South Pond was constructed utilizing native silty sand soils for containment berms overlain with three (3) liners (top liner – 30 mil impermeable high-density polyethylene; intermediate liner – Fibertex Grade 600 Geotextile liner; and bottom liner - 20 mil impermeable high-density polyethylene). A leak detection system was installed underlying the lined contact water pond between the intermediate and bottom liners.

During South Pond closure activities, each of the three (3) liners associated with the pond will be removed, characterized and disposed off-site in accordance with applicable local, state and federal regulations.

Subsequent to the removal of the liners from the South Pond, five (5) soil borings will be advanced on-site utilizing a direct push Geoprobe® drilling rig. One (1) soil boring will be advanced in the vicinity of each pond wall, and one (1) soil boring will be advanced in the central portion of the former pond. The soil borings will be advanced to a maximum depth of approximately 15 feet bgs, five feet below the initial water table, or auger refusal, whichever is more shallow. One (1) soil sample will be collected from each confirmation soil boring from 1.) the zone exhibiting the highest concentration of petroleum hydrocarbons based on visual, olfactory or photoionization detector (PID) evidence, 2.) from a change in lithology, or 3.) from the bottom of the boring. The soil samples collected from the confirmation soil borings will be analyzed for TPH GRO/DRO and BTEX.

Directly upon completion of liner removal activities and receipt of confirmation sample analyses, the earthen berms will be razed, and the area returned to natural grade. The reclaimed South Pond area will be compacted utilizing the on-Site equipment.

Specific details concerning this plan are further explained in the following sections and should be read to fully comprehend the extent of the proposed scope of work.

2.0 INTRODUCTION

2.1 Site Description & Background

The Enterprise Chaco Gas Plant consists of approximately 190-acres of land developed with a cryogenic[1] gas plant, amine treatment unit and natural gas compression facilities. The Site is located at 895 County Road (CR) 7100 in Section 16, Township 26N, Range 12W in San Juan County, New Mexico, approximately 17.5 miles south of Farmington.

The North Pond and South Pond were constructed at the Site in 1994 for the disposal of petroleum contact water generated during natural gas processing operations at the Site. The North Pond and South Pond failed integrity testing performed in 1995. Enterprise successfully repaired the South Pond liner, but the North Pond liner failed testing again in 1997. A new liner was installed in the North Pond in 1998 and again failed the subsequent integrity testing. The lined contact water ponds were subsequently removed from service in 1999, and petroleum contact water has since been transported off-site for disposal. The North Pond was physically reclaimed during early 2000.

A topographic map is included as Figure 1, aerial photographs of the Site and vicinity are included as Figures 2 and 3, and a Site Plan is included as Figure 4 of Appendix A.

2.2 Chronology of Events

Below is a list of significant milestones or events associated with the Site.

May 4, 1987 – El Paso Natural Gas Company (EPNG) submitted a letter to the New Mexico Energy, Minerals and Natural Resource Department, Oil Conservation Division (OCD) providing registration documentation of the nine (9) "unlined" surface impoundments or ponds located at the Chaco Plant. The industrial ponds accepted comingled petroleum contact water and non-contact water generated from gas processing activities.

May 14, 1987 – The OCD issued a letter approving the "pit" registrations provided only produced fluids generated from the fields listed in the registration forms are disposed in the ponds. In addition, the letter stipulates the waste streams must be identified in the "discharge plan application" when a plan is requested.

March 1, 1991 – The OCD formally notifies EPNG that a discharge plan is required for the Chaco Gas Plant in accordance with Water Quality Control Commission (WQCC) regulations.

November 15, 1991 – EPNG submits a Discharge Plan for the Chaco Gas Plant.

[1] Cryogenic processes include dropping the temperature of the natural gas stream to around -120 degrees Fahrenheit to extract NGLs from natural gas.

March 16, 1992 – EPNG received approval from the OCD to operate a soil remediation site (SRS) at the Chaco Plant to remediate petroleum hydrocarbon impacted soils.

May 18, 1992 – The OCD approved the EPNG Groundwater Discharge Plan for the Chaco Gas Plant.

May 13, 1993 – EPNG submitted a letter to the OCD requesting EPNG be permitted to continue the use of the unlined ponds for non-contact water based on the quality of the waste water discharged, depth to groundwater and Site geology.

August 2, 1993 – The OCD issued a letter requesting additional analysis of cooling tower effluent to the unlined ponds for cadmium. In addition, the OCD requested a groundwater monitoring program be developed in association with any unlined ponds.

November 1993 – Subsequent to the construction of two (2) lined evaporation/disposal ponds, petroleum contact water would be segregated from the non-contact water and routed to the lined ponds. Four (4) monitoring wells (MW-1 through MW-4) were installed in the vicinity of the unlined ponds as part of a Groundwater Discharge Plan modification as requested by the OCD.

August 1, 1994 – EPNG submitted a modification to Groundwater Discharge Plan GW-071. The modification enabled the continued use of industrial ponds #3 through #6 and #8 as non-contact water ponds. At the request of the OCD, EPNG installed three (3) additional monitoring wells (MW-5 through MW-7) to further evaluate 1.) the direction of groundwater flow, 2.) poor groundwater quality in the vicinity of MW-4 and 3.) general groundwater quality characteristics.

August 16, 1994 – EPNG submitted a notification letter to the OCD indicating the intention to construct two (2) lined evaporation/disposal ponds to contain petroleum contact water at the Chaco Gas Plant.

November 22, 1994 – In a letter regarding "*Sold Waste Pit Closures*" the OCD approved the closure plan submitted by EPNG for the solid waste pit located on the southwestern portion of the Chaco Gas Plant provided the soil samples collected from the pit were analyzed for hazardous waste characteristics.

August 10, 1995 – The OCD approved the EPNG "Angel Peak and Chaco Plant *Solid Waste Pit Closure Sampling*" dated June 5, 1995 and the EPNG "*Solid Waste Pit Closures at EPNG's Angel Peak and Chaco Facilities*" dated June 5, 1995 based on EPNG's waste characterization sampling.

October 10, 1995 – EPNG submitted an "*Annual Report of Monitoring Well Analyses & Request Approval of Work Plan for Chaco Industrial Ponds and Flare Pit*" to the OCD. EPNG proposed a closure plan for industrial ponds #1 and #2 and the earthen flare pit. The proposed closure plan included the advancement of seven (7) soil borings, including

one (1) boring within each of the ponds (industrial pond #1 and #2) and the earthen flare pit. Soil samples would be collected from industrial pond #1 and #2 and the earthen flare pit from 3 to 5 feet bgs. In addition, soil samples would be collected from each boring at total depth. One (1) monitoring well (MW-8) would be installed to the north of the earthen flare pit, near the property boundary, to ensure contaminants were not migrating off-site. The soil and groundwater samples would be analyzed for TPH GRO/DRO, BTEX, polynuclear aromatic hydrocarbons (PAH), RCRA metals and/or cations/anions.

October 13, 1995 – The OCD approved the EPNG "*Annual Report of Monitoring well Analyses & Request Approval of Work Plan for Chaco Industrial Ponds and Flare Pit*".

October 19, 1995 - EPNG submitted a "*Request Major Modification of Discharge Plan GW-071 – Chaco Processing Plan*" to the OCD. The modification was requested to facilitate the addition of a Cryogenic processing unit to the plant, which greatly increases the production of petroleum contact water.

November 16, 1995 – EPNG submitted a "*Request for Closure of Chaco Industrial Ponds and Flare Pit*". During the completion of closure activities, seven (7) soil borings, including one (1) boring within each of the ponds (industrial pond #1 and #2) and the earthen flare pit were advanced at the Site. Groundwater was not encountered during the installation of monitoring well MW-8; so, the boring was abandoned and an additional monitoring well (MW-8b) was installed to the south, toward the former earthen flare pit. The soil sample collected from soil boring B-5, located within the central portion of industrial pond #1, exhibited a benzene concentration of 2.4 mg/Kg, a toluene concentration of 1.0 mg/Kg, an ethylbenzene concentration of 0.7 mg/Kg, a xylenes concentration of 4.5 mg/Kg and a TPH concentration of 38,400 mg/Kg. The groundwater sample collected from monitoring well MW-8b exhibited a benzene concentration of 29.5 µg/L.

November 17, 1995 – The OCD approved the EPNG "*Request for Closure of Chaco Industrial Ponds and Flare Pit*" pending receipt of a report documenting remediation and closure activities; delineation of groundwater contamination between MW-1 and MW-8b; and, semi-annual sampling of groundwater from monitoring wells MW-1 and MW-8b for BTEX and PAH analysis.

November 17, 1995 – EPNG notified the OCD that the "Ballard Pond" and the two (2) lined contact water evaporation/disposal ponds located at the Chaco Gas Plant had failed an integrity test. Eight (8) leaks were identified within the liner seams of the "Ballard Pond", nineteen (19) leaks in the north contact water pond (North Pond) and fifteen (15) in the south contact water pond (South Pond).

January 16, 1997 – El Paso Field Services (EPFS) submitted an annual letter report regarding the sampling of groundwater monitoring wells and waste water streams. According to the EPFS letter, "the analysis for monitoring wells MW-2 through MW-7 did not indicate any abnormally high reading for any analyte. We have been unable to collect a sample from monitoring well MW-1. That well as yet never collected any liquids.

The June 24 sample of the 20 inch waste water discharge line did show a chromium level slightly above the New Mexico Water Quality standards. The chromium level in the sample was 0.132 mg/L."

May 15, 1997 – EPNG submitted a letter work plan to the OCD detailing the results of liner repairs associated with the North Pond and South Pond at the Chaco Plant. The South Pond did not exhibit indications of leaks or integrity failures subsequent to repair. The North Pond repairs did not pass leak testing subsequent to repair; therefore, EPNG proposed to install two (2) monitoring wells (MW-9 and MW-10), remove the North Pond from service with use only in case of emergency and monitor groundwater from monitoring wells MW-9 and MW-10 for TDS, pH and BTEX for one year (four (4) quarters), then annually for two (2) additional years.

June 13, 1997 – The OCD approved EPNG's letter work plan dated May 15, 1997 with regard to the proposed installation of two (2) monitoring wells (MW-9 and MW-10), the removal of the North Pond from service with use only in case of emergency and the monitoring of groundwater from monitoring wells MW-9 and MW-10 for TDS, pH and BTEX for one year (four (4) quarters), then annually for two (2) additional years.

August 22, 1997 – Two (2) soil borings/monitoring wells (MW-9 and MW-10) were installed adjacent to the North Pond by Philip Services Corporation (PSC) on behalf of EPNG.

February 6, 1998 – EPFS submitted an annual letter report regarding the sampling of groundwater monitoring wells and waste water streams. According to the EPFS letter, "the analysis for monitoring wells MW-2 through MW-7 did not indicate any abnormally high reading for any analyte.

The organic analyses for well 10 indicates high levels of several hydrocarbons. Since there is no hydrocarbon waste disposed on in the lined contact waste water ponds, the source of contamination in well 10 is most likely the old flare pit which was closed in 1994."

February 8, 1999 – EPNG submitted an annual letter report regarding the sampling of groundwater monitoring wells and waste water streams. According to the EPFS letter, "the analysis for monitoring wells MW-2 through MW-7 did not indicate any abnormally high reading for any analyte. Monitoring well MW-10, adjacent to the old flare pit which was closed in 1995, exceeds several water quality standards for organics."

September 9, 1999 – EPNG submitted a minor modification request with regard to Groundwater Discharge Plan GW-071 to the OCD. "Rather than make any further attempts to repair the liner, EPFS has decided to discontinue use of the contact water ponds."

March 22, 2000 – PSC, on behalf of EPFS, prepared a letter report documenting the removal of the plastic liner and closure of the South Chaco Pit. Subsequent to the removal of approximately 430 gallons of sludge from the bottom of the pit, each of the three (3) liners were removed. Soil samples were collected from each wall and the floor of the pit. In addition, soils in the central portion of the pit were excavated to an approximate depth of 12 feet bgs. A soil sample was collected from the bottom of the excavation. The pit was then backfilled and graded to conform to the surrounding topography.

The PSC letter report appears to be associated with the North Pond rather than the South Pond, which is still present at the facility.

February 2, 2000 – EPFS submitted an annual letter report regarding the sampling of groundwater monitoring wells and waste water streams. According to the EPFS letter, "the analysis for monitoring wells MW-2 through MW-7 did not indicate any abnormally high reading for any analyte. Monitoring well MW-10, adjacent to the old flare pit which was closed in 1995, exceeds several water quality standards for organics.

Monitoring wells MW-1, MW-8b and MW-9 have not exceeded any state limits for organics during 1997, 1998 or 1999. Due to a change in plant operations during 1999, contact wastewater is no longer discharge to on-site ponds. This waste stream is now disposed of off-site in a class 1 underground injection well. The water quality of the non-contact wastewater discharge is such that it would not degrade any waters of the state if the wastewater did percolate to groundwater. Therefore, EPFS requests authorization to cease monitoring the non-contact wastewater and monitoring well MW-1 through MW-9. Due to high levels of BTEX, EPFS will continue to sample monitoring well MW-10 on a quarterly basis."

January 31, 2001 – EPFS submitted an annual letter report regarding the sampling of groundwater monitoring wells and waste water streams. According to the EPFS letter, "the analysis for monitoring wells MW-2 through MW-4, MW-6 and MW-7 did not indicate any abnormally high reading for any analyte. Monitoring well MW-5 tested higher for sulfate than in past sampling. Monitoring well MW-10, adjacent to the old flare pit which was closed in 1995, exceeds several water quality standards for organics."

January 16, 2002 – EPFS submitted an annual letter report regarding the sampling of groundwater monitoring wells and waste water streams. According to the EPFS letter, "the analysis for monitoring wells MW-2, MW-4, MW-6 and MW-7 did not indicate any abnormally high

reading for any analyte. Monitoring well MW-3 was dry and could not be sampled. Monitoring well MW-10, adjacent to the old flare pit which was closed in 1995, exceeds several water quality standards for organics."

March 14, 2003 – EPFS submitted an annual letter report regarding the sampling of groundwater monitoring wells and waste water streams. According to the EPFS letter, "The analysis for monitoring well MW-2 showed an elevated level of chlorides. Monitoring wells MW-2, MW-4, MW-6 and MW-7 all had high readings for sulfates. Monitoring well MW-3 was dry and could not be sampled. Monitoring well MW-10, adjacent to the old flare pit which was closed in 1995, exceeds several water quality standards for organics."

March 28, 2005 – ENTERPRISE submitted an annual letter report regarding the sampling of groundwater monitoring wells and waste water streams.

April 5, 2006 – ENTERPRISE submitted an annual letter report regarding the sampling of groundwater monitoring wells and waste water streams.

July 14, 2009 – The OCD approves the Enterprise Groundwater Discharge Plan GW-071 renewal, subject to the conditions noted in their June 11, 2009 site inspection. In addition to other findings, this inspection noted the presence of the inactive contact water pond (South Pond), and requested a closure of the pond.

September 1, 2009 – Enterprise submits a response to the July 14, 2009 OCD correspondence requesting closure actions at the South Pond. The Enterprise response states that a closure plan for the pond will be developed and submitted to the OCD for approval, and that closure of the pond will be scheduled during 2010.

2.3 Proposed Scope of Work

The objective of the proposed closure activities is to further evaluate the quality of groundwater on-Site in the vicinity of the non-contact water ponds and the lined contact water ponds located on the northwest portion of the Site.

In addition, Southwest Geoscience's (SWG's) objective includes the removal of the South Pond located on the northwest portion of the Site in accordance with the OCD request in the OCD *Discharge Permit Renewal* correspondence dated July 14, 2009. A copy of the OCD *Discharge Permit Renewal* correspondence dated July 14, 2009 is included in Appendix E.

2.4 Standard of Care & Limitations

The findings and recommendations contained in this report represent SWG's professional opinions based upon information derived from on-Site activities and other services performed under this scope of work, and were arrived at in accordance with currently acceptable professional standards. The findings were based, in part, upon analytical results provided by an independent laboratory. Evaluations of the geologic/hydrogeologic conditions at the Site for the purpose of

this plan are made from a limited number of available data points (i.e. soil borings and ground water samples) and Site-wide subsurface conditions may vary from those observed at these data points. SWG makes no warranties, express or implied, as to the services performed hereunder. Additionally, SWG does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties).

This report is based upon a specific scope of work requested by Enterprise. The agreement between SWG and Enterprise outlines the scope of work, and only those tasks specifically authorized by that agreement or outlined in this report were performed. This report has been prepared for the intended use of Enterprise and their subsidiaries, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Enterprise and SWG.

3.0 SITE CHARACTERIZATION

3.1 Geology & Hydrogeology

The Geologic Map of New Mexico (2003), published by the New Mexico Bureau of Geology and Mineral Resources, indicates the Site is located over soils formed from the Nacimiento Formation. The Nacimiento Formation in the area of the Site is composed of shale, siltstone, and sandstone, deposited in floodplain, fluvial and lacustrine settings, and made up of sediment shed from the San Juan uplift to the north and the Brazos-Sangre de Cristo uplift to the east.

Subsurface lithology was documented during installation of the existing groundwater monitoring network at the Site. Between September 1993 and June 1994, seven (7) monitoring wells were installed at the Site by Burlington Environmental, Inc. Three (3) additional monitoring wells were installed between October 1995 and July 1997 by PSC. The lithologies encountered during the advancement of soil borings MW-1 through MW-10 included a brown sand with silt and clay from the surface to a depth of approximately 25 feet bgs. Interbedded grey, yellow and grayish-green silty clay lenses were identified in select borings.

Groundwater was encountered during the installation of the monitoring wells at the Site at depths ranging from 4 to 25 feet bgs. The groundwater depth associated with the initial shallow, unconfined groundwater-bearing unit (Nacimiento Formation) varies depending upon seasonal variations in precipitation and the depth to the initial confining unit. Recharge areas for shallow unconfined units are typically local and can be influenced by surface development of impervious cover (buildings, parking lots, roads). The groundwater flow direction in these unconfined aquifer units is highly variable but is generally toward the nearest down-gradient water body (lakes, creeks, rivers) and can be approximated by observing the surface topography.

The major aquifer underlying the Site vicinity is listed as the Colorado Plateaus Aquifer, which is made up of four smaller aquifers, the Uinta-Animas, the Mesa Verde, the Dakota-Glen, and the Coconino-De Chelly. The general composition of the aquifers are moderately to well-consolidated sedimentary rocks of an age ranging from Permian to Tertiary. Each aquifer is separated from the others by an

impermeable confining unit. Two of the confining units are completely impermeable and cover the entire area of the aquifers. The other two confining units are less extensive and are thinner. These units allow water to flow between the principal aquifers. There are countless streams, rivers, and lakes that overlay the Colorado Plateaus Aquifers. The surface water bodies in this region provide a place for the aquifers to discharge. Some of the high altitude rivers and lakes may also provide recharge.

3.2 Surface Water Hydrology

Stormwater from the Site surface flows to a stormwater retention pond located on the southwestern portion of the Site (non-contact water pond #8). The Site vicinity topographically slopes to the west, towards the West Fork of Gallegos Canyon, which flows north to the San Juan River.

3.3 Land Use & Classification

Land use was determined by comparison of existing land use of the Site to the definitions for residential and non-residential (commercial/industrial) land use published in the applicable regulatory guidance. The Site is currently utilized as a gas plant; therefore, commercial/industrial land use is deemed appropriate for the Site.

4.0 GROUNDWATER MONITORING

4.1 Monitoring Wells

Ten (10) monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8b, MW-9 and MW-10) were previously installed at the Site. Monitoring well MW-1 is located at the northern boundary of the Site, hydrogeologically cross- to down-gradient of select non-contact water ponds and the former lined-contact water ponds. Monitoring well MW-2 is located at the western boundary of the Site, hydrogeologically down-gradient of select non-contact water ponds and the former lined-contact water ponds. Monitoring well MW-3 is located on the northwest portion of the Site, adjacent to non-contact water ponds #3 and #4, hydrogeologically down-gradient of the former lined-contact water ponds. Monitoring well MW-4 is located at the southern boundary of the northwest portion of the Site, hydrogeologically cross-gradient of the non-contact water ponds and the former lined-contact water ponds. Monitoring wells MW-5, MW-6 and MW-7 are located on the southwest portion of the Site, in the vicinity of the former solid waste pit and storm water retention pond. Monitoring wells MW-8b, MW-9 and MW-10 are located in the vicinity of the former industrial ponds #1 and #2, the former flare pit and the lined contact water ponds.

Figure 3 is a Site Plan that indicates the approximate location of the monitoring wells in relation to pertinent structures and land features (Appendix A).

The lithologies encountered during the advancement of soil borings MW-1 through MW-10 included a brown sand with silt and clay from the surface to a depth of approximately 25 feet bgs. Interbedded grey, yellow and grayish-green silty clay lenses were identified in select borings.

Subsequent to advancement, soil borings MW-1 through MW-7, MW-8b, MW-9 and MW-10 were converted to permanent monitoring wells. Monitoring well construction details are presented on the soil boring/monitoring well logs included in Appendix B.

4.2 Groundwater Sampling Program

During the proposed groundwater monitoring event, a groundwater sample will be collected and analyzed from each monitoring well. Prior to sample collection, each monitoring well will be micro-purged utilizing low-flow sampling techniques. Low-flow refers to the velocity with which groundwater enters the pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen. It does not necessarily refer to the flow rate of water discharged at the surface which can be affected by flow regulators or restrictions. Water level drawdown provides the best indication of the stress imparted by a given flow-rate for a given hydrological situation. The objective will be to pump in a manner that minimizes stress (drawdown) to the system, to the extent practical, taking into account established site sampling objectives. Flow rates on the order of 0.1 to 0.5 L/min will be maintained during sampling activities, using dedicated sampling equipment.

The utilization of low-flow minimal drawdown techniques enables the isolation of the screened interval groundwater from the overlying stagnant casing water. The pump intake is placed within the screened interval such that the groundwater recovered is drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone.

The groundwater samples will be collected from each monitoring well once produced groundwater was consistent in color, clarity, pH, DO, ORP, temperature and conductivity.

4.3 Groundwater Flow Direction

The monitoring wells located at the Site have been surveyed for top-of-casing (TOC) elevations. Each groundwater monitoring well was gauged utilizing an interface probe capable of detecting the presence of water and phase-separated hydrocarbons (PSH) on August 20, 2009 by LodeStar Services, Inc. A groundwater gradient map constructed based on the relative groundwater elevations recorded from this gauging event is included as Figure 5 (Appendix A).

Based on the groundwater elevations associated with each of the monitoring wells, groundwater generally flows to the west-northwest at an average hydraulic gradient of 0.015 ft/ft.

Prior to the collection of groundwater samples during the proposed groundwater monitoring event, the fluid levels in each of the monitoring wells will be gauged utilizing an interface probe capable of detecting PSH. The relative groundwater elevations on the Site will be utilized to construct a groundwater gradient map. The groundwater gradient map will depict the groundwater elevations at each monitoring well, the date of data collection, the calculated direction of groundwater flow and any limiting conditions regarding the evaluation of groundwater flow at the site.

5.0 LABORATORY ANALYTICAL PROGRAM

5.1 Laboratory Analytical Methods

The groundwater samples collected from the monitoring wells during the proposed groundwater sampling event will be analyzed for select cations/anions (calcium, magnesium, chloride, sulfates, fluoride, nitrates, potassium and sodium) utilizing EPA method SW-846# 6010B/6020A or EPA method SW-846# 9056, phosphates utilizing SM 4500 PB.5/E and total dissolved solids (TDS) utilizing SM 2540C. In addition, the groundwater samples collected from monitoring wells MW-8b, MW-9 and MW-10 will be analyzed for total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO) utilizing EPA method SW-846#8015M and benzene, toluene, ethylbenzene and xylenes (BTEX) utilizing EPA method SW-846 #8021B.

A summary of the analysis, sample type, sample frequency and EPA-approved methods are presented on the following page:

Analysis	Sample Type	No. of Samples	Method
Calcium	Groundwater	10	SW-846# 6010B/6020A
Magnesium	Groundwater	10	SW-846# 6010B/6020A
Chloride	Groundwater	10	SW-846# 9056A
Sulfates	Groundwater	10	SW-846# 9056A
Fluoride	Groundwater	10	SW-846# 9056A
Nitrates	Groundwater	10	SW-846# 9056A
Phosphates	Groundwater	10	SM 4500 PB.5/E
Potassium	Groundwater	10	SW-846# 6010B/6020A
Sodium	Groundwater	10	SW-846# 6010B/6020A
Total Dissolved Solids	Groundwater	10	SM 2540C
TPH GRO/DRO	Groundwater	3	SW-846# 8015M
BTEX	Groundwater	3	SW-846# 8021B

5.2 Quality Assurance/Quality Control (QA/QC)

Sampling equipment will be cleaned using an Alconox® wash and potable water rinse prior to the beginning of the project and before the collection of each sample.

Groundwater samples will be collected and placed in laboratory prepared glassware, sealed with custody tape and placed on ice in a cooler, which will be secured with a custody seal. The sample coolers and completed chain-of-custody forms will be relinquished to Hall Environmental analytical laboratory in Albuquerque, NM on a normal turnaround basis.

6.0 SOUTH POND CLOSURE

The proposed closure activities include the removal of the South Pond located on the northwest portion of the Site in accordance with the OCD request in the OCD *Discharge Permit Renewal* correspondence dated July 14, 2009. The lined contact water pond to be removed, referred to as the "south lined contact water pond" (South Pond), was installed at the Site in 1995, along with the north contact water pond (North Pond), formerly located immediately north of the South Pond.

The South Pond was constructed utilizing native silty sand soils for containment berms overlain with three (3) liners (top liner – 30 mil impermeable high-density polyethylene; intermediate liner – Fibertex Grade 600 Geotextile liner; and bottom liner - 20 mil impermeable high-density polyethylene). A leak detection system was installed underlying the lined contact water pond between the intermediate and bottom liners. A copy of the construction plans and "as-builts" for the South Pond are included in Appendix E.

6.1 Liner Removal

During the completion of the South Pond closure activities, each of the three (3) liners associated with the pond will be removed, characterized and disposed off-site in accordance with applicable local, state and federal regulations.

6.2 Confirmation Sampling

Subsequent to the removal of the liners from the South Pond, five (5) soil borings will be advanced on-site utilizing a direct push Geoprobe® drilling rig under the supervision of a State of New Mexico licensed monitoring well driller. One (1) soil boring will be advanced in the vicinity of each pond wall, and one (1) soil boring will be advanced in the central portion of the South Pond. The soil borings will be advanced to a maximum depth of approximately 15 feet bgs, five feet below the initial water table, or auger refusal, whichever is more shallow.

Sampling and drilling equipment will be cleaned using an Alconox® wash and potable water rinse prior to commencement of the project and between the advancement of each soil boring.

Soil samples will be collected continuously using core barrels or split spoon samplers to document lithology, color, relative moisture content and visual or olfactory evidence of impairment. In addition, the samples will be scanned with a PID for the presence of petroleum hydrocarbons.

SWG's confirmation soil sampling program will consist of the following:

- Collection of one (1) soil sample from each confirmation soil boring from 1.)

the zone exhibiting the highest concentration of VOC's based on visual, olfactory or PID evidence, 2.) from a change in lithology, or 3.) from the bottom of the boring.

The soil samples will be collected in laboratory prepared glassware and placed in an iced cooler which will be secured with a custody seal. The samples will be transported to a selected analytical laboratory along with a completed chain-of-custody form.

The soil samples collected from the confirmation soil borings will be analyzed for TPH GRO/DRO utilizing EPA method SW-846 #8015M and BTEX utilizing EPA method SW-846#8021B. A summary of the analysis, sample type, and EPA-approved methods are presented below:

Analysis	Sample Type	Number of Samples	Method
TPH GRO/DRO	Soil	5	SW-846 #8015M
BTEX	Soil	5	SW-846 #8021B

6.3 Site Restoration

Directly upon completion of liner removal activities and receipt of confirmation sample analyses, the earthen berms will be razed, and the area returned to natural grade. The lined contact water pond area will be compacted utilizing the on-Site equipment.

6.4 Future Use of Site

The Site is expected to be utilized for industrial use as a natural gas processing plant and compression facility.

7.0 CLOSURE REPORT

Upon completion of the South Pond removal activities, a final closure report will be prepared for submittal to the OCD that will include documentation of field activities, a site plan detailing pertinent site features, photographic documentation, laboratory analytical results, an evaluation of closure results and recommendations concerning further action, if necessary.

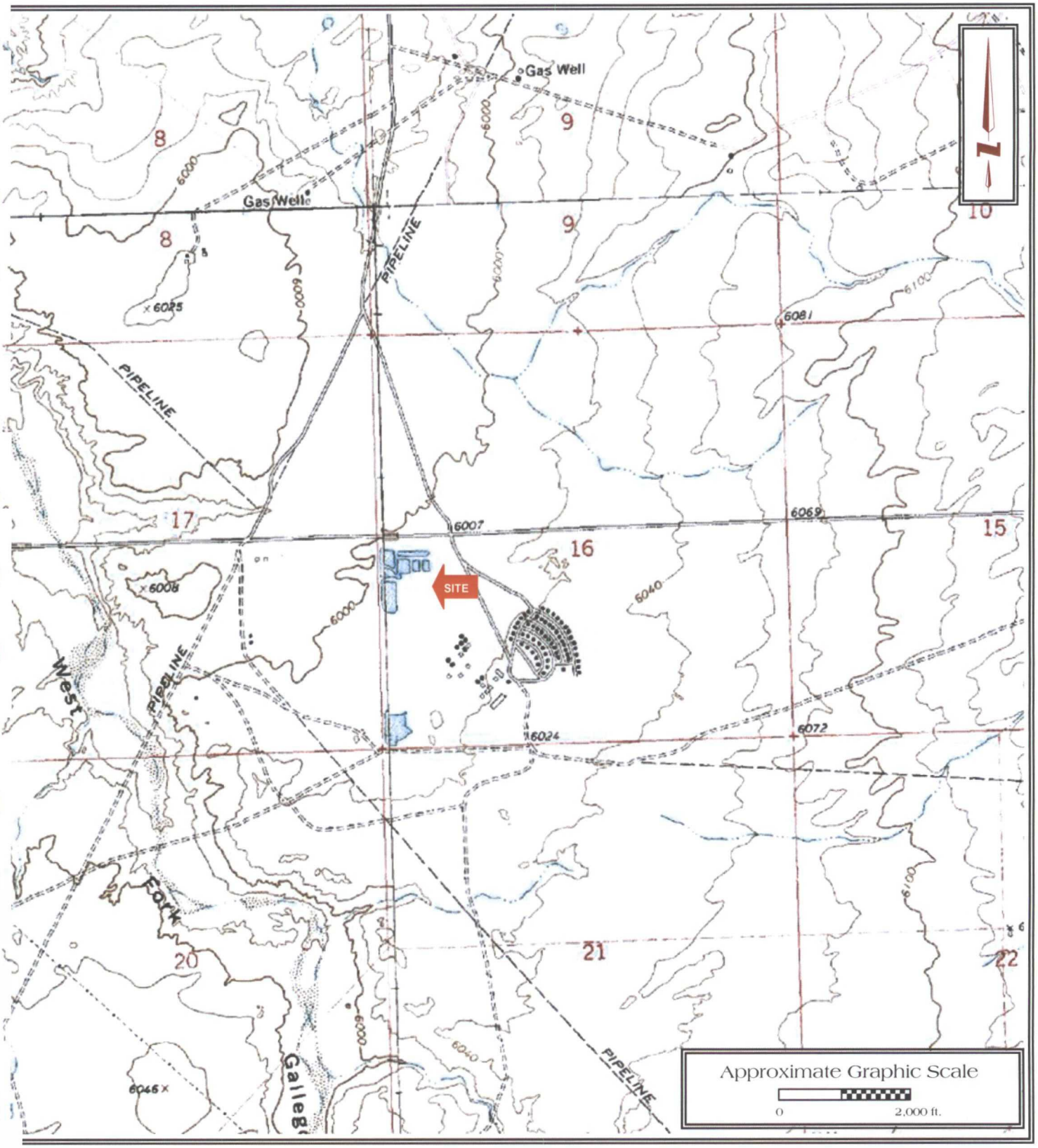
8.0 SCHEDULE

Following OCD approval, it is estimated that closure of the South Pond will require approximately four (4) weeks; however, time estimations regarding the completion of proposed activities depend upon several factors, many of which cannot be pre-determined.

Southwest GEOSCIENCE

APPENDIX A

Figures



Closure Plan
Lined Contact Water Pond
Chaco Gas Plant
N36° 29' 09.27"; W108° 07' 28.19"
Off CR 7100
San Juan County, New Mexico
WG Project No. 0410001B

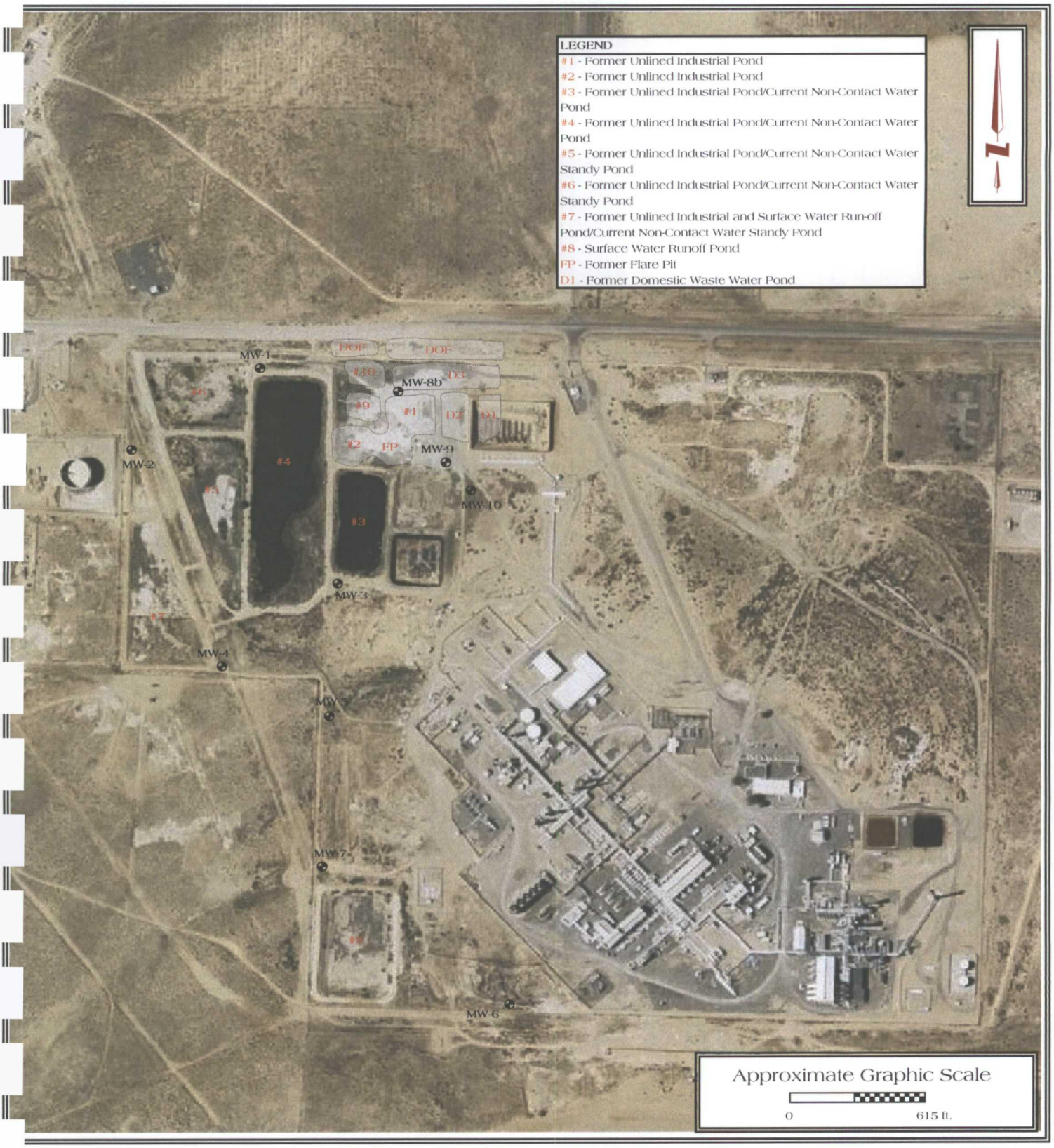
Southwest GEOSCIENCE

FIGURE 1
Topographic Map
Moncisco Wash & Carson
Trading Post, NM Quadrangles
Contour Interval - 10 Feet

Closure Plan
Lined Contact Water Pond
Chaco Gas Plant
N36° 29' 09.27"; W108° 07' 28.19"
Off CR 7100
San Juan County, New Mexico
SWG Project No. 0410001B

Southwest GEOSCIENCE

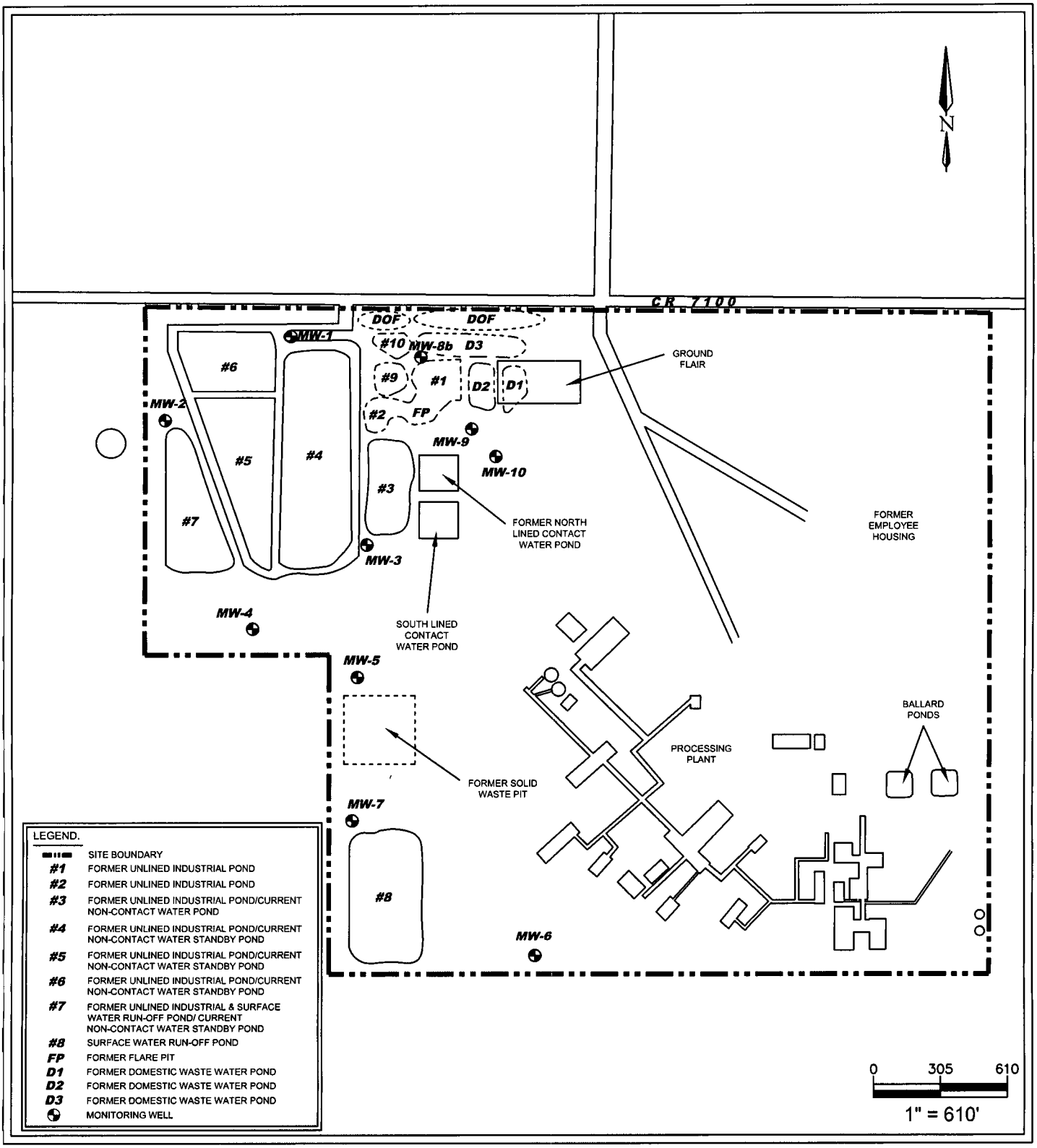
FIGURE 2
Site Vicinity Map
2009 Aerial Photograph



Closure Plan
Lined Contact Water Pond
Chaco Gas Plant
N36° 29' 09.27"; W108° 07' 28.19"
Off CR 7100
San Juan County, New Mexico
NG Project No. 0410001B

Southwest GEOSCIENCE

FIGURE 3
Aerial Photograph
w/ Monitoring Wells and
Ponds



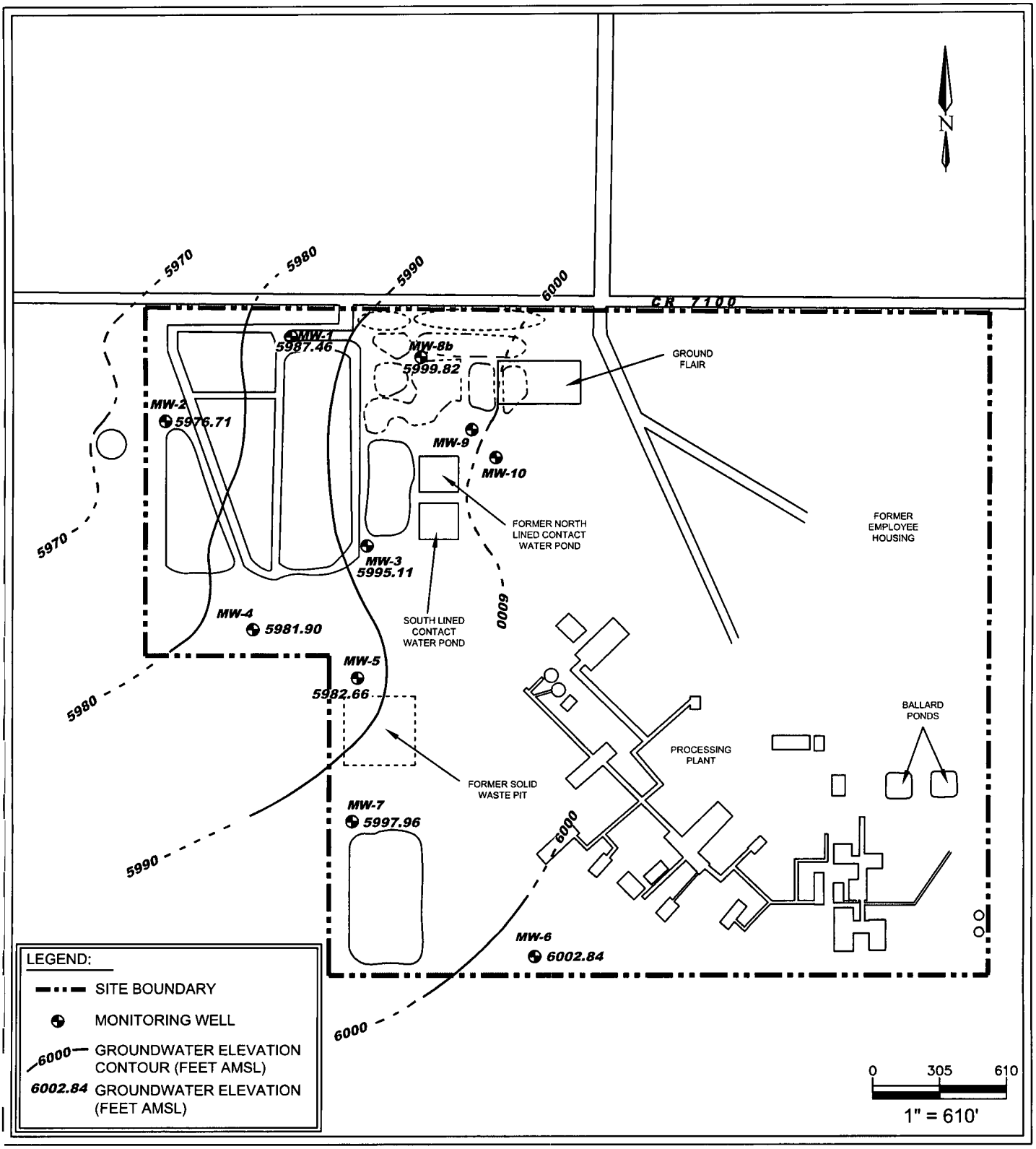
Closure Plan
Lined Contact Water Pond
Chaco Gas Plan
N36° 29' 09.27"; W108° 07' 28.19"
Off CR 7100
San Juan County, New Mexico

SWG Project No. 0410001B

Southwest GEOSCIENCE

FIGURE 4

SITE MAP



Closure Plan
Lined Contact Water Pond
Chaco Gas Plan
N36° 29' 09.27"; W108° 07' 28.19"
Off CR 7100
San Juan County, New Mexico

SWG Project No. 0410001B

Southwest GEOSCIENCE

FIGURE 5

GROUNDWATER GRADIENT MAP

GAUGING DATE:
8.20.09

Southwest GEOSCIENCE

APPENDIX B

Soil Boring/Monitoring Well Logs

RECORD OF SUBSURFACE EXPLORATION

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

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'.
						13.0				
15	3	15	SS 24	Brown SAND, medium-coarse grained, trace Clay, trace Silt, moist, medium dense.			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'. *
30				TOB - 23.8'						
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 SUBSURFAC[illegible]ORATION

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

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: NDU 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, odstaining, moist, very stiff.	CL		0	0	0	- Tight drilling.
						8.0				
10	2	10	SS 18	Lt. Brown Silty SAND, fine-medium grained, trace Clay, odstaining, moist, dense.	SM		0	0	0	- Sample refusal at 18". Tight drilling continues.
						13.0				- Tight drilling continues.
15	3	15	SS 6	Brown-Lt. Brown SAND, coarse grained, trace Silt, trace coarse gravel, moist, very dense, cemented fragments.			0	0	0	- 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 6'
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 BZ	BH	S	Drilling Conditions & Blow Counts
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, oxistains, 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				- Sample refusal at 3'.
20	4	20	SS 3	Brown-Gray SAND, coarse grained, moist, very dense, possibly cemented.	SP		0	0	0	No odors.
				TOB - 20'						
25										
30										
35										
40										

Comments: Will set well at 20'.

Geologist Signature Scott T. Pope

RECORD OF SUBSURFAC[illegible]LORATION

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

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

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 BZ	BH	S	Drilling Conditions & Blow Counts
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	
						8.0				- Sample Refusal at 15".
10	2	10	SS 16	Brown-Lt.Brown Silty SAND w/Clay, fine-med. Sand, some oxistaining, moist, very dense.	SM		0	0	0	- Very tight drilling. Had to add water (5 gal) to get cuttings to exit hole.
				Lt. Brown-Yellow CLAY w/Sand, trace moisture, very stiff (cuttings).	CL	11.0				
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'.
						18.0				- Refusal at 6'.
20	4	20	SS 6	Lt. Brown coarse SAND, trace Gravel, trace Silt, moist, very dense, possibly cemented.	SP		0	0	0	- Had 4" water in hole. - Noted gravel in cuttings, some as large as 2".
						23.0				- Refusal at 12'.
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		0	0	0	- Had approximately 2" of water enter hole after sitting 10 min. - Noted abundant saturated cuttings.
						28.0				- Driller noted changes at 27'.
30	6	30	SS 24	Gray Silty CLAY w/periodic fine Sand lenses, oxi-staining, trace coal, low plasicity, moist, very stiff. Appeared laminated in some areas.	CL					
				TOB - 30'						
35										
40										

Comments: Will set well at 28'.

Geologist Signature Scott T. Pope

RECORD OF SUBSURFACE EXPLORATION

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

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

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 BZ	BH	S	Drilling Conditions & Blow Counts
0										
		3.5	SS	Brown Sandy CLAY, trace Silt, Sand						
5	1	5.5	20"	fine-medium grained, some evaporite filling of voids and oxi-stains, medium plasticity, medium stiff, moist.	CL		0	0	0	
						7.5				Driller noted change in conditions @ 7.5'.
		8.5	SS	Brown SAND, fine-medium grained,	SW		0	0	0	
10	2	10.5	24"	loose, moist to wet.		10.5				
				Brown-gray CLAY, trace fine Sand and Silt, stiff, moist, some evaporite filling of voids.	CL		0	0	0	
						13.5				Refusal @ 6".
		13.5	SS	Lt. Brown-Tan SAND, medium-coarse			0	0	0	
15	3	15.5	6"	grained, very hard possibly cemented, moist.						
		18.5	SS	Tan-Buff SAND, same as above.	SW		0	0	0	Refusal @ 8".
20	4	20.5	8"							
				Lt. Brown-Buff SAND, fine grained, very			0	0	0	Refusal @ 8".
		23.5	SS	hard, trace moisture, probably cemented.						
25	5	25.5	8"	Lt. Brown-Buff SAND, coarse grained, trace fine Gravel, trace Clay, moist-wet.	SP	24	0	0	0	Noted 1" water in bottom of hole on driller's tape.
		28.5	SS	Lt. Brown-Buff silty SAND, fine grained,		28.5				
30	6	30.5	10"	very hard, moist, probably cemented.	SW		0	0	0	Refusal @ 10".
				TOB 28.2'						- Hole open to 28'. - Pulled auger up 2' to let water accumulate in borehole. Water came up to 25'. - Discussed well completion with Gerry Garibay, will set @ 28' with 20' of screen.
35										
40										

Comments:

Geologist Signature Scott T. Pope

7/11/94\MW05LOG.XLS

RECORD OF SUBSURFACE EXPLORATION

Borehole # MW - 06
Well # MW - 08
Page 1 of 1

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

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: NDU BZ	BH	S	Drilling Conditions & Blow Counts
0										
		3.5	SS	Brown-Lt. Brown SAND, fine grained,			0	0	0	Refusal @ 12".
5	1	5.5	12"	trace Silt, some evaporite filling of voids, very hard, moist.	SP					
		8.5	SS	Brown SAND, fine grained, trace Silt,			0	0	0	
10	2	10.5	24"	medium dense, moist to wet.						
						13.5				
		13.5	SS	Brown CLAY, with Silt and fine Sand, stiff,	CL		0	0	0	Pull augers up 1' to
15	3	15.5	24"	moist, evaporite filling of voids.						1st 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				TOB - 22.0'						
25										
30										
35										
40										

Comments:

Geologist Signature Scott T. Pope

RECORD OF SUBSURFACE EXPLORATION

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

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

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 8 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	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 well. - No samples taken after 10.5'.
15				TOB 17.5'						
20										
25										
30										
35										
40										

Comments:

Geologist Signature

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH#1
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 1459 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 K. 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, 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~~ ppm BZ	BH	S/NS	Drilling Conditions & Blow Counts
0				Fill to ~ 3'						
5	1	5-7	5"	Gry silty SAND, vf sand, loose, ~~saturated~~ emc water, moist	SM		0	20	48/138	1016 hr
10	2	10-12	10	Blk silty SAND, vf sand, loose, saturated.		12'	0	30	12/NA	1021 Sample saturated. No Headspace GW est. @ 11'
15	3	15-17	8	lt Br silty CLAY, med stiff, low plastic, saturated			0	18	2/NA	1027 Sample sat. No HS
20	4	20-22	24	lt Br silty CLAY, stiff, non plastic, dry.	CL		0	0	0/0	1039
25	5	25-27	23	lt Br silty CLAY, tr vf sand, v. stiff, non plastic, dry			0	0	0/0	1102
30	6	30-32	12	Br silty CLAY, tr vf sand, v. stiff, non plastic, tr evaporite filling's			0	0	0/0	1113
				TOB 32'						
35										
40										

Comments: CMC 147 (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 Cmy 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: Chaco Plant BH-2

Elevation: ~5' below berm
Borehole Location: Chaco 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, 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				Fill to ~5'						
5	1	5-7	0	No Recovery			0	8	NA	-1302hr
										-Ctngs wet
10	2	10-12	6"	Blk SAND, vF sand, med dense, moist	SM		0	6	0/345	-1307
						12'				-GW@~12' -Ctngs sat. @ 13'
15	3	15-17	18"	lt Br silty CLAY, stiff, med plastic, tr evaporite fillings, dry			0	4	0/108	-1318
20	4	20-22	14"	lt Br sandy CLAY, vF sand, stiff, non plastic, sl moist	CL		0	8	0/0	-1327
						23'				
25	5	25-27	12	lt Br SAND, vf-f sand, dense, dry	SM		0	6	0/0	-1338
						27'				
30	6	30-32	12	lt Br/yellow/dk Br mottled CLAY, dense, dry	CL		0	3	0/0	-1353
				TOB 32'						
35										
40										

Comments: Note: ... From above is collecting on split spoon. CMC144 (10-12') sent to lab for TPH. CMC145 (30-32') sent to lab for BTEX, TPH. BH grouted to surface by tremie

Geologist Signature [signature]

5/18/95\DRILLOG1.XLS

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH # 3
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 6010.77
Project Location Chaco Plant BH-3

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

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, 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 BZ	BH	S/W	Drilling Conditions & Blow Counts
0										
5	1	5-7	14	Blk sandy CLAY, vf sand, med stiff, low plastic, dry	CL		0	0	1/25	-0740 hr
						8				
10	2	10-12	8	Gry SAND, vf-f sand, med dense, moist			0	3	1/4	-0746 -GW @ 10.5' Black
					SM					
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		20	0	3	0/0	-0807
					CL					
25	5	25-27	20	AA			0	3	0/0	-0818
						26				
30	6	30-32	18	lt Br clayey SAND, vf-f sand, dense, dry, tr evaporite filling	SC		0	0	0/0	-0826
				DK Br CLAY, v. stiff, low plastic, dry	CL	31.5				
35				TDB 32'						
40										

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

Geologist Signature Cory 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 PITS
Project Number 14509 Phase 6010.77
Project Location Chaco Plant Industrial Pond #2

Elevation (ref) ~~Surface~~ Berm Level inside Pit
Borehole Location Chaco Plant
GWL Depth
Logged By CM Chance
Drilled By K. Padilla
Date/Time Started 10/11/95 - 0755
Date/Time Completed 10/11/95 - 1000

Well Logged By CM Chance
Personnel On-Site E. Rivera, D. Chacon
Contractors On-Site
Client Personnel On-Site P. Marquez

Drilling Method 4¼ 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: ppm BZ	BH	S	Drilling Conditions & Blow Counts
0				Fill to ~10'						
5										
10										
	1	13-15	24"	Br SAND, vf-f sand, well sorted, loose, saturated	SM		0	8	0/NA	-0810 hr -sample saturated -GW est. @ 14'
15										
20	2	20-22	12"	Br CLAY, tr vf sand, med stiff, nonplastic, dry	CL	20.5'	0	72	0/0	-0904
				TOB 22'						
25										
30										
35										
40										

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

Geologist Signature Cory Chance

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-5
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 Industrial Pond #1 BH-5

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

Well Logged By CM Chance
Personnel On-Site F. Rivera, D. Charlie
Contractors On-Site
Client Personnel On-Site P. Marquez

Drilling Method 4¼ 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: PPM BZ	BH	S/H	Drilling Conditions & Blow Counts
0				Fill to ~8'						
10	1	10-12	4	Blk SAND, vf-f sand, med dense, sl moist			0	0	4/209	-0945 hrs -GW@12.7' Black
15	2	15-17	24	Gry SAND, vf-f sand, dense, wet,			0	6	0/2	-0954
				Blk silty SAND, vf sand, dense, moist						
20	3	20-22	10	lt Br sandy CLAY, vf sand, dense, dry, tr evaporite filling			0	0	0/0	-1001
25	4	25-27	18	AA			0	0	0/0	-1010
				DK Br CLAY, v. stiff, low plastic, dry						
				lt Br clayey SAND, vf-f sand, dense, dry, organic fragments.						
30	5	30-32	8	Br sandy CLAY, v. stiff, non plastic, dry, tr evaporite filling			0	0	0/0	-1017
				TOB 32'						
35										
40										

Comments: CMC 148 (10-12) sent to lab (BTEX, TPH). Sample had higher 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 Cm CChance

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-6
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-6

Elevation On berm
Borehole Location Chaco Plant
GWL Depth 13.6'
Logged By CM Chance
Drilled By K. 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 R. Marquez

Drilling Method 4¼ 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: PPM BZ	BH	S/H	Drilling Conditions & Blow Counts
0										
5	1	5-7	10	lt gry SAND, vf sand, v. loose, sl moist.	SM		0	0	0/16	-1342
				BlK SAND, vf sand, v. loose, sl moist						
10	2	10-12	8	lt Grey SAND, vf sand, loose, sl moist	SM		0	0	2/LJ	-1347
				Br clayey SAND, vf sand, loose, sl moist.						-GW@13.6'
15	3	15-17	10	DK grey-grey SAND, vf sand, med dense, wet	SM		0	1	0/NA	-1352 -No HS. Sample Saturated
						17				
20	4	20-22	10	Lt Br/Grey 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 (BTEX, TPH)
BH grouted to surface w/ tremie

Geologist Signature Cory 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 K. 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 4¼ 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: PPM 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 hr
10	2	10-12	18	lt gry SAND, vf sand, med dense, sl moist			0	0	4/32	1133
15	3	15-17	16	BLK SAND, vf sand, med dense, moist			0	0	9/0	1139
20	4	20-22	18	A/A Br silty CLAY, stiff, nonplastic, dry.			0	0	0/0	1144 GW@20.3' after setting 10 min CTNGS SATURATED
25	5	25-27	8	BLK clayeySAND, vf sand, dense, wet lt Br - Reddish Br SAND, vf sand, v. dense, dry.			0	0	0/0	1202
30	6	30-32	10	lt Br silty SAND, vf sand, v. dense, dry, to evaporite fillings TOB 32'			0	0	0	1219
35										
40										

Comments: CMC150 (10-12') sent to lab (TPH). CMC151 (30-32') sent to lab (BTEX, TPH)
BH grouted to surface w/ tremie

Geologist Signature Cmg Chance

RECORD OF SUBSURFACE EXPLORATION

Borehole # ~~BH1~~ BH 8a
Well #
Page 1 of 2

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 ~~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 10/12/95-0820
Date/Time Completed 10/12/95-1300

Well Logged By CM Chance
Personnel On-Site K Padilla, F. Rivera, D. Chadic
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4" ID HSA 8¼/1.D
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 BZ	BH	S HS	Drilling Conditions & Blow Counts
0				Fill to ~10'						
5										
10	1	10-12	4	Br SILT, loose, dry			0	0	%	-0833 hr
15	2	15-17	5	Br/gry mottled CLAY, tr vf sand, med stiff, low plastic, dry			0	0	%	-0844
20	3	20-22	4	A/A			0	0	%	-0904
										-v. hard drlng
25	4	25-27	5	lt Br SAND, vf-f sand, v. dense, sl cemented, dry			0	0	%	-10/5 -Refusal @ 23' w 8¼.
30	5	30-32	4	lt Br SAND, F-med sand, v. dense, dry			0	0	%	-1026
35	6	35-37	4	A/A			0	0	%	-1039
40	7	40-42	4	Br/gry w/ SAND, vf-f, tr med sand, occ. cementation dry			0	0	%	-1045

Comments: Refusal w/ 8¼ I.D augers @ 23'. Will pull & drill pilot hole w/ 4¼ CMC 154 (40-42') sent to lab (BTEX, TPH). Refusal @ 45' w/ 4¼ augers. Grout BH to surface. Discussed w/ P. Marquez & will move S. to install MW

Geologist Signature Cmy Chance

RECORD OF SUBSURFACE EXPLORATION

Borehole # ~~BH-1~~ BH 8a
Well #
Page 2 of 2

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 77
Project Location: Chaco 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, E. Rivera, D. Chadis
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 BZ	BH	S HS	Drilling Conditions & Blow Counts
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

Borehole # ~~BH-1~~ BH-8b
Well # MW-8
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 ~~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 10/13/95 - 1525

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
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 BZ	BH	S HS	Drilling Conditions & Blow Counts
0										
5	1	5-10	10	Br SILT, v. soft, dry, tr clay			0	0	S	-1335
10	2	10-12	8	lt Gry SILT, v. soft, dry, tr clay			0	0	S/D	-1343
15	3	15-17	6	lt Gry silty SAND, vf sand, loose, moist			0	0	S/B	-1349 -Split Spoon has moisture on it
20	4	20-22	12	lt gry/Br mottled CLAY, soft, med plasticity moist			0	0	S/D	-Water dripping from SS -1355
25				Gry saturated CTNGS						
				TDB 26'						
30										
35										
40										

Comments: GW @ 16.2' after setting is mic. CMC 155 (15-17') sent to lab (BTEXTPH)
Will set well at 26' BGS

Geologist Signature Cmg Chance

MONITORING WELL INSTALLATION RECORD

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

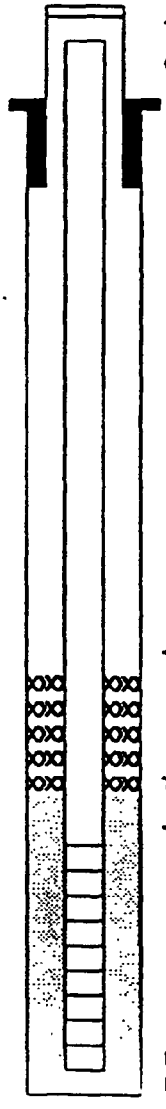
Elevation
Well Location MW-1
GWL Depth 15.0
Installed By RODGERS, INC.

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

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

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



Top of Protective Casing +2.5
Top of Riser +2.2
Ground Surface 0.0
Top of Seal -3.3
Top of Gravel Pack -5.8
Top of Screen -7.8
Bottom of Screen -23.0
Bottom of Borehole -23.8

Comments: 8 BAGS OF SAND, 1 BUCKET OF PELLETS

Geologist Signature Susan T. Pope

JAL_MW2.WK1

MONITORING WELL INSTALLATION RECORD

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

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

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

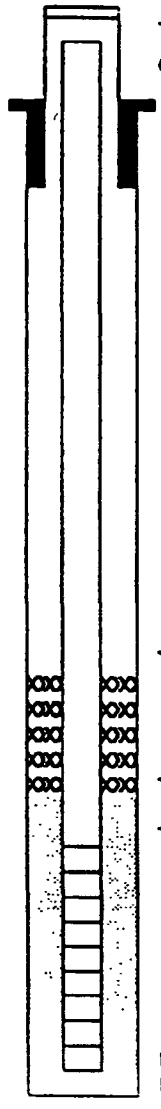
Elevation
Well Location MW-2
GWL Depth 15'
Installed By RODGERS, INC.

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

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

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



Top of Protective Casing	+2.8
Top of Riser	+2.5
Ground Surface	0.0
Top of Seal	-5.8
Top of Gravel Pack	-7.8
Top of Screen	-9.8
Bottom of Screen	-25.0
Bottom of Borehole	-25.0

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

Geologist Signature Steve T. Pope

JAL_MW2.WK1

MONITORING WELL INSTALLATION RECORD

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
Project Location CHACO PLANT

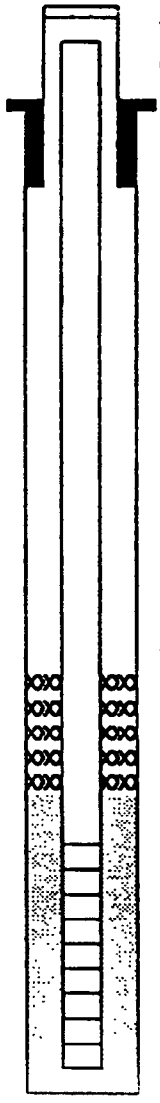
Elevation
Well Location MW-3
GWL Depth 8'
Installed By RODGERS, INC.

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

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

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



Top of Protective Casing +2.5
Top of Riser +2.2
Ground Surface 0.0
Top of Seal -1.5
Top of Gravel Pack -3.5
Top of Screen -4.5
Bottom of Screen -19.8
Bottom of Borehole -20.0

Comments: 6 BAGS OF SAND, 1½ BUCKET OF PELLETS
WELL WAS PULLED UP 3" DUE TO BRIDGING SAND. WATER LEVEL AFTER INSTALLATION 11.3' BGS.

Geologist Signature Scott T. Pope

JAL_MW2.WK1

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

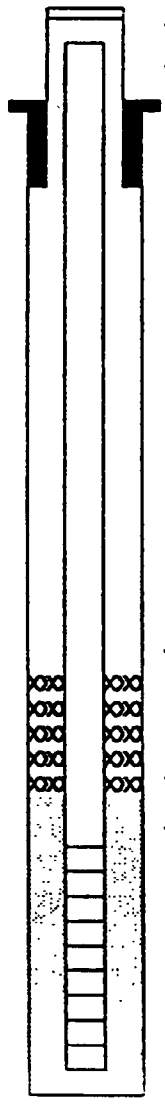
Elevation
Well Location MW-4
GWL Depth 20'
Installed By RODGERS, INC.

Date/Time Started 9/30/93 1210
Date/Time Completed 9/30/93 1330

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

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



Top of Protective Casing +2.8
Top of Riser +2.5
Ground Surface 0.0
Top of Seal -9.0
Top of Gravel Pack -11.0
Top of Screen -12.8
Bottom of Screen -28.0
Bottom of Borehole -28.0

Comments: WATER LEVEL AT 17.5 AFTER INSTALLATION. 7.5 BAGS OF SAND, 1½ BUCKETS OF SAND

Geologist Signature Scott T. Pope

JAL_MW2.WK1

MONITORING WELL INSTALLATION RECORD

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

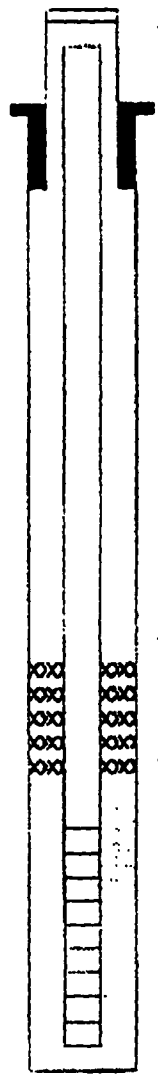
Elevation
Well Location MW-05
GWL Depth 23.0
Installed By RODGERS, INC.

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

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

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	+.25
Bottom of Concrete		-1.5
Top of Grout		N/A
Bottom of Grout		N/A
Top of Well Riser	4" SCH 40 PVC	+2.0
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 2.5
Top of Riser 2.0
Ground Surface 0.0
Top of Seal 1.5
Top of Gravel Pack 5.7
Top of Screen 8.0
Bottom of Screen 28.1
Bottom of Borehole 29.2

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

Geologist Signature

JAL_MW2.WK1

MONITORING WELL INSTALLATION RECORD

Burlington Environmental Inc.
4000 Monroe 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
Project Number 12588 Phase 2001
Project Location SAN JUAN COUNTY, NEW MEXICO

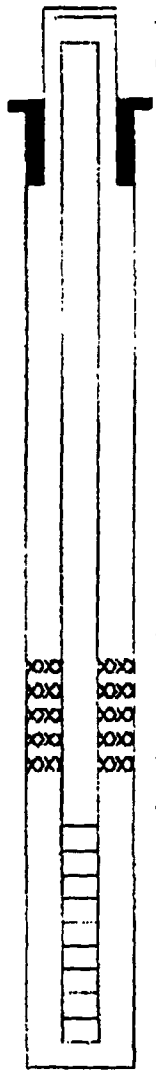
Elevation
Well Location MW-06
GWL Depth 11.5
Installed By RODGERS, INC.

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

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

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	+.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 Peltonite Seal	1/4" BENTONITE PELLETS	-1.5
Bottom of Peltonite 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 2.5
Top of Riser 2.3
Ground Surface 0.0
Top of Seal 1.5
Top of Gravel Pack 5.0
Top of Screen 6.9
Bottom of Screen 22.0
Bottom of Borehole 22.0

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

JAL_MW2.WK1

MONITORING WELL INSTALLATION RECORD

Burlington Environmental Inc.
4000 Monroe 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

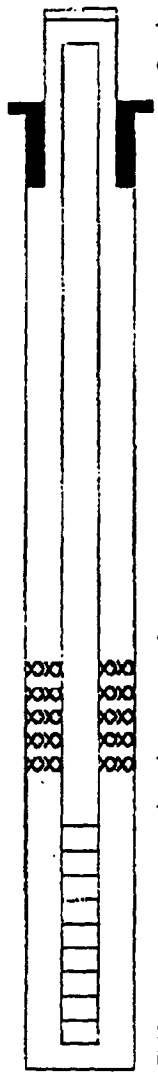
Elevation
Well Location MW-07
GWL Depth 4.0
Installed By RODGERS, INC.

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

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

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 2.5
Top of Riser 2.3
Ground Surface 0.0
Top of Seal 0.0
Top of Gravel Pack 1.5
Top of Screen 1.9
Bottom of Screen 17.0
Bottom of Borehole 17.7

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

Geologist Signature Scott T. Pope

JAL_MW2.WK1

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(506) 326-2262 FAX (606) 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

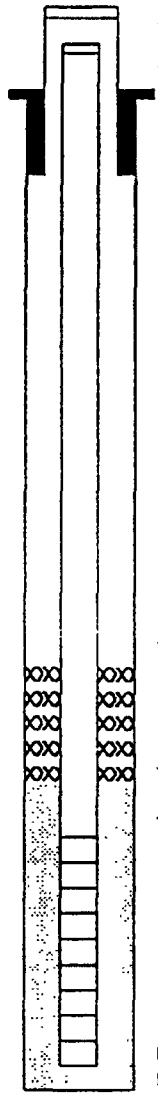
Elevation
Well Location Q -S -T -R
GWL Depth 16.2'
Installed By R. Padilla

Date/Time Started 10/13/95 - 1540
Date/Time Completed 10/13/95 - 1700

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

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		NA
Bottom of Protective Casing		NA
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete		NA
Bottom of Concrete		NA
Top of Grout	-94# Type I-II Portland	0'
Bottom of Grout	-50# Powdered Bentonite	4.7
Top of Well Riser	4" dia SCH40	+3
Bottom of Well Riser	Flush Thread PVC	9.7
Top of Well Screen	4" dia SCH40	9.7
Bottom of Well Screen	Flush Thread 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	-50# 10-20	6.7
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'



Top of Protective Casing NA
Top of Riser +3'
Ground Surface 0

Top of Seal 4.7

Top of Gravel Pack 6.7

Top of Screen 9.7

Bottom of Screen 24.7
Bottom of Borehole 26

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

Geologist Signature CM Chance

RECORD OF SUBSURFACE EXPLORATION

Borehole #
Well # MW-9
Page of

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

Project Name EPFS CHACO MW's
Project Number 18227 Phase 6001
Project Location Chaco

Elevation
Borehole Location N. OF CONTACT POND
GWL Depth 9.7
Logged By S. POPE
Drilled By K. PADILLA
Date/Time Started 1200 7/24/97
Date/Time Completed 1315

Well Logged By S. Pope
Personnel On-Site D. Charlie
Contractors On-Site —
Client Personnel On-Site —

Drilling Method HSA 6¼ ID
Air Monitoring Method PID

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				BROWN SANDY Clay, Fine Grained SAND, Mod Stiff, DRY - Trace Moisture	CL					
5	1	5 7	24	BROWN-TAN SAND w/Silt, Fine Grained, LOOSE, Dry - Trace Moisture	SP	5.0	0	0	0	
10				GRAY SANDY CLAY Fine - [illegible] grained Some Black oil Discoloration, Mod Stiff Moist	CL	9.0				Headspace = 3.0 ppm
	2	10 12	24	GRAY-BLACK SAND w/SOME CLAY Fine Mod GROWED. Med dense Saturated @ 11.0	SW	11.0	0	0	0	NOTE: Discolored SOILS @ 11 Slight Sewer odor
15										WATER Level Rose TO 9.7' BGS
20				TOB 21.0						Will Drill to 20. and SET Well.
25										
30										
35										
40										

Comments:

Geologist Signature

MONITORING WELL INSTALLATION RECORD

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

Borehole # _____
Well # MW-09
Page ____ of ____

Project Name Chaco MW's
Project Number 18227 Phase 6001
Project Location Chaco Plant

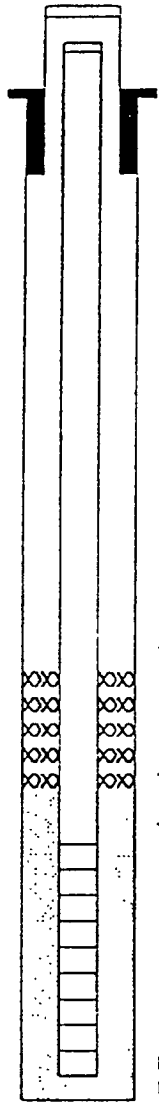
Elevation _____
Well Location N. Side of Contact Water Pond
GWL Depth _____
Installed By K. Padilla

Date/Time Started 1315 7/24/97
Date/Time Completed 1500 7/24/97

On-Site Geologist S. Pope
Personnel On-Site D. Charlie
Contractors On-Site —
Client Personnel On-Site —

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing	Square 6" Steel	3.1
Bottom of Protective Casing		2.9
Top of Permanent Borehole Casing		—
Bottom of Permanent Borehole Casing		—
Top of Concrete		+.3
Bottom of Concrete		0.0
Top of Grout		—
Bottom of Grout		—
Top of Well Riser	SCH40, 4" ID	+3.0
Bottom of Well Riser	PVC	4.6
Top of Well Screen	SCH40, 4" PVC	4.6
Bottom of Well Screen	.010 SLOT	20.0
Top of Peltonite Seal	3/8" Bentonite	0.0
Bottom of Peltonite Seal	Hole Plug	2.6
Top of Gravel Pack	10-20 Silica Sand	2.6
Bottom of Gravel Pack		20.0
Top of Natural Cave-In		20.0
Bottom of Natural Cave-In		21.0
Top of Groundwater		9.7
Total Depth of Borehole		21



Top of Protective Casing +3.1
Top of Riser +3.0
Ground Surface 0.0

Top of Seal 0.0
Top of Gravel Pack 2.6
Top of Screen 4.6
Bottom of Screen 20.0
Bottom of Borehole 21.0

Comments: 15 Bag Sand, 2.5 Bags Hole Plug, WL = 8.45 BGS After Installation

Geologist Signature Scott T. Pope

RECORD OF SUBSURFACE EXPLORATION

Borehole # MW-10
Well # MW-10
Page of

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

Project Name Chaco Well Installation
Project Number 18227 Phase 6001
Project Location

Elevation
Borehole Location MW-10
GWL Depth 9.2
Logged By S. Pope
Drilled By K Padilla
Date/Time Started 7/24/97 0900
Date/Time Completed 7/24/97 1000

Well Logged By S. Pope
Personnel On-Site D. Charlie
Contractors On-Site —
Client Personnel On-Site —

Drilling Method HSA 6¼ ID
Air Monitoring Method PID

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					CL					
5	1	5 7	24	BROWN SILTY SAND TRACE CLAY FINE SAND LOOSE MOIST GRADING to a (6TP6") SANDY CLAY Med. Stiff.	ML	5.0	0	0	0	
10	2	10 11	24	BROWN TO GRAY SAND TRACE SILT AND CLAY, Grading From FINE Coarse Grained SAND, LOOSE, SATURATED No additional SAMPLE collected Below WATER.	SW	10	0	0	0	WL = @ 9.2 WILL DRILL TO 20 Feet and SET WELL.
15										
20				TOB 20						
25										
30										
35										
40										

Comments: Will drill to 20. and Set well @ 19.5.

Geologist Signature Scott T. Pope

MONITORING WELL INSTALLATION RECORD

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

Borehole # MW-10
Well # MW-10
Page ____ of ____

Project Name Chaco PLANT MW's
Project Number 18227 Phase 6001.77
Project Location Chaco PLANT

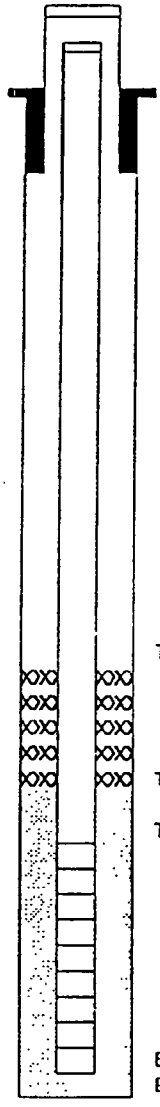
Elevation ____
Well Location EAST SIDE OF WATER POND
GWL Depth 9.2 BGS
Installed By R. PADILLA

Date/Time Started 1000 7/24/97
Date/Time Completed 1130 7/24/97

On-Site Geologist S. Pope
Personnel On-Site D. Chavlie
Contractors On-Site —
Client Personnel On-Site —

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing	SQUARE 6" Steel	3.1
Bottom of Protective Casing		2.9
Top of Permanent Borehole Casing	N/A	—
Bottom of Permanent Borehole Casing		—
Top of Concrete		+.3
Bottom of Concrete		0
Top of Grout	N/A	—
Bottom of Grout	N/A	—
Top of Well Riser	SCH 40, 4 INCH	+3.0
Bottom of Well Riser	PVC	4.0
Top of Well Screen	SCH 40, 4 INCH	4.0
Bottom of Well Screen	PVC, .010 SLOT	19.4
Top of Peltonite Seal	3/8 BENTONITE	0
Bottom of Peltonite Seal	HOLE PLUG	2.0
Top of Gravel Pack	10-20 SILICA	2.0
Bottom of Gravel Pack		19.4
Top of Natural Cave-In		19.4
Bottom of Natural Cave-In		20.0
Top of Groundwater		9.2
Total Depth of Borehole		20.0



Top of Protective Casing 3.1
Top of Riser 3.0
Ground Surface 0
Top of Seal 0
Top of Gravel Pack 2.0
Top of Screen 4.0
Bottom of Screen 19.4
Bottom of Borehole 20.0

Comments: 13 BAGS SAND, 1.5 BAG HOLE PLUG WATER LEVEL 8.4 BGS AFTER INSTALLATION.

Geologist Signature S. T. Pope

Southwest GEOSCIENCE

APPENDIX C

Photographic Documentation

1.) General view of the lined contact water pond to be closed at the Site.

2.) General view of the area to the north of the contact water pond and the northern berm on the contact water pond.

Southwest GEOSCIENCE

APPENDIX D

Tables

TABLE 1
CHACO GAS PLANT
GROUNDWATER ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total Naphthalenes (µg/L)	Total Benzopyrenes (µg/L)	Methyl-tert-butyl Ether (MTBE) (µg/L)	1,2,4-trimethylbenzene (µg/L)	1,3,5-trimethylbenzene (µg/L)
NM WQCC Standard for Groundwater of 10,000 mg/L TDS or Less		10.0	750	750	620	30	0.7	NE	NE	NE
MW-1	6 24 96	NOT SAMPLED - INSUFFICIENT SAMPLE VOLUME								
	3 11 97	<1 0	<1 0	<1 0	<3 0	ND	ND	NA	NA	NA
	9 30 97	<1 0	<1 0	<1 0	<3 0	ND	ND	NA	NA	NA
	9 15 98	<1 0	<1 0	<1 0	<3 0	ND	ND	NA	NA	NA
	9 21 99	<0 5	<0 5	<0 5	<0 5	ND	ND	NA	NA	NA
	9 12 00	<0 5	<0 5	<0 5	<0 5	ND	ND	NA	NA	NA
	10 16 01	1 4	<0 5	<0 5	2 8	ND	ND	NA	NA	NA
	9 20 02	<0 5	<0 5	<0 5	<1 0	ND	ND	NA	NA	NA
	8 18 04	ND	ND	ND	ND	ND	ND	NA	NA	NA
	9 30 05	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10 30 06	ND	ND	ND	ND	NA	NA	ND	NA	NA
	6 19 07	ND	ND	ND	ND	NA	NA	ND	ND	ND
	6 30 08	ND	ND	ND	ND	NA	NA	ND	ND	ND
	6 24 09	ND	ND	ND	ND	NA	NA	ND	ND	ND
MW-2	6 30 08	ND	ND	ND	ND	NA	NA	ND	ND	ND
MW-3	6 30 08	ND	ND	ND	ND	NA	NA	ND	ND	ND
MW-4	6 30 08	ND	ND	ND	ND	NA	NA	ND	ND	ND
MW-5	6 30 08	ND	ND	ND	ND	NA	NA	ND	ND	ND
MW-6	6 30 08	ND	ND	ND	ND	NA	NA	ND	ND	ND
MW-7	6 30 08	ND	ND	ND	ND	NA	NA	ND	ND	ND
MW-8b	3 12 96	10 0	<1 0	<1.0	<3 0	75	<0 3	NA	NA	NA
	5 29 96	6 62	<1 0	<1.0	<3 0	NA	NA	NA	NA	NA
	7 2 96	<1 0	<1 0	<1.0	<3 0	NA	NA	NA	NA	NA
	9 9 96	<1 0	<1 0	<1.0	<3 0	ND	ND	NA	NA	NA
	11 1 96	<1 0	<1 0	<1.0	<3 0	NA	NA	NA	NA	NA
	3 11 97	<1 0	<1.0	<1.0	<3 0	ND	0 34	NA	NA	NA
	9 30 97	<1 0	<1 0	<1 0	<3 0	ND	ND	NA	NA	NA
	9 15 98	<1 0	<1 0	<1 0	<3 0	2 3	ND	NA	NA	NA
	9 21 99	<0 5	<0 5	<0 5	<0 5	ND	ND	NA	NA	NA
	9 12 00	<0 5	<0.5	<0 5	<0 5	ND	ND	NA	NA	NA
	10 16 01	<0 5	<0.5	<0 5	<0 5	ND	ND	NA	NA	NA
	9 20 02	<0 5	<0 5	<0 5	<1 0	ND	ND	NA	NA	NA
	8 18 04	ND	ND	ND	ND	ND	ND	NA	NA	NA
	9 30 05	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10 30 06	ND	ND	ND	ND	NA	NA	ND	ND	ND
	6 19 07	ND	ND	ND	ND	NA	NA	ND	ND	ND
	6 30 08	ND	ND	ND	ND	NA	NA	ND	ND	ND
	6 24 09	ND	ND	ND	ND	NA	NA	ND	ND	ND
MW-9	9 30 97	<1.0	<1 0	<1 0	<3 0	ND	ND	NA	NA	NA
	9 15.98	<1 0	<1 0	<1 0	<3 0	ND	ND	NA	NA	NA
	9 21 99	<0 5	<0 5	<0.5	<0 5	NA	NA	NA	NA	NA
	9 12.00	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA
	10 16 01	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA
	9 20 02	<0 5	<0 5	<0 5	<1 0	NA	NA	NA	NA	NA
	8 18 04	ND	ND	ND	ND	NA	NA	NA	NA	NA
	9 30 05	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10.30 06	ND	ND	ND	ND	NA	NA	ND	ND	ND
	6 19 07	ND	ND	ND	ND	NA	NA	ND	ND	ND
	6 30 08	ND	ND	ND	ND	NA	NA	ND	ND	ND
	6 24 09	ND	ND	ND	ND	NA	NA	ND	ND	ND
MW-10	9 30 97	**702**	493	34 6	241	**100**	ND	NA	NA	NA
	9 15 98	**923**	432	47	312	ND	ND	NA	NA	NA
	9 21 99	**20**	9	41	105	NA	NA	NA	NA	NA
	9 12 00	**150**	6	53	170	NA	NA	NA	NA	NA
	10 16 01	**74**	<5 0	40	170	NA	NA	NA	NA	NA
	9 20 02	**91**	0 93	32	94	NA	NA	NA	NA	NA
	8 18 04	2 0	ND	19	42	NA	NA	NA	NA	NA
	9 30 05	2 0	ND	9 1	17	ND	ND	NA	NA	NA
	10 30 06	7 1	ND	5 9	ND	NA	NA	ND	ND	ND
	6 19 07	2 3	ND	4 9	3 4	NA	NA	ND	2 5	ND
	6 30 08	1 0	ND	1 3	ND	NA	NA	ND	ND	ND
	6 24 09	ND	ND	1 2	ND	NA	NA	ND	ND	ND

mg/L - milligrams per liter µg/L - microgram per liter

< - Denotes a concentration was not detected above the method detection limit

Note Concentrations in **bold** and yellow exceed the applicable New Mexico WQCC Standard

TABLE 2
CHACO GAS PLANT
GROUNDWATER ANALYTICAL RESULTS - GEOCHEMICAL PARAMETERS

Sample I.D.	Date	pH (unitless)	Alkalinity (CO_3) (mg/L)	Alkalinity (HCO_3) (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Total Hardness (mg/L)	Chloride (mg/L)	Sulfate (SO_4) (mg/L)	Fluoride (mg/L)	Nitrate (NO_3) (mg/L)	Nitrate (NO_3) (mg/L)	Ammonia (NH_3) (mg/L)	Bromide (mg/L)	Phosphate (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Total Dissolved Solids (mg/L)	Conductivity (umhos/cm)	Cadmium (mg/L)	Chromium (mg/L)	Mercury (mg/L)
NM WQCC Standard for Groundwater of 10,000 mg/L TDS or Less		6 to 9	NE	NE	NE	NE	NE	NE	600	1.6	10	NE	NE	NE	NE	NE	NE	1,000	NE	0.010	0.050	0.002
MW-1	9 30 97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0 002	<0 004	<0 002
	9 15 98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0 0002	<0 004	<0 0002
	9 21 99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	9 12 00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	10 16 01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0 0004	0 0010	**0 0174**
	9 20 02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	8 18 04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	9 30 05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	6 19 07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	6 30 08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	6 24 09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
MW-2	6 24 96	7 7	0 0	426	112	22 5	372	162	**714**	**1.8**	<0 1			NA	<0 1	1 1	493	**1,772**	2 500	0 0008	0 008	<0 00024
	6 24 97	8 2	0 0	365	135	30 0	461	264	**819**	**3.3**	<0 6	<0 6	<0 2	NA	<0 6	2 3	510	**1,990**	2 800	<0 0002	<0 004	<0 00002
	6 9 98	7 3	0 0	420	99	24 0	346	197	**768**	**2.2**	0 6	0 6	0 2	NA	0 6	2 9	504	**1,836**	2 640	0 001	0 005	0 002
	7 19 99	7 2	0 0	621	87	24 0	316	546	346	**1.9**	<0 6	<0 6	<0 2	NA	<0 6	4	616 0	**1,992**	2 920	ND	ND	ND
	6 20 00	7 4	0 0	530	110	33 0	410	1 400	27	**170**	<0 1	<0 1	<0 05	NA	0	1 9	820	**2,800**	4 800	<0 005	<0 005	<0 0002
	6 25 01	8 1	490	480	110	37 0	425	1 700	23	**4.2**	0 12	ND	0 42	NA	0 18	2 7	1,100	**3,000**	5 400	<0 005	<0 005	**0 0031**
	6 11 02	7 6	430	430	91	32 0	360	1 500	19	**2.7**	<0 10	<0 10	0 22	NA	0 21	2 0	890	**2,800**	5 000	<0 005	<0 005	<0 0002
	8 18 04	8 1	ND	270	130	30 0	510	47	**1,000**	**2.2**	ND	ND	ND	NA	ND	ND	440	**1,800**	2 200	ND	ND	ND
	6 16 05	7 3	280	NS	210	47 0	730	52	**1,200**	**1.8**	ND	NA	NA	NA	ND	1 7	350	**2,200**	2 700	ND	ND	ND
	10 30 06	NA	NA	NA	180	44 0	NA	64	**1,200**	**2.3**	ND		NA	NA	ND	ND	470	NA	NA	ND	ND	ND
	6 19 07	NA	ND	230	190	42 0	NA	51	**1,200**	**1.9**	ND		NA	2 3	ND	ND	380	**2,000**	2 800	ND	ND	ND
	6 24 09	NA	ND	230	210	45 0	NA	61	**1,300**	**1.8**	ND		NA	NA	ND	ND	370	**2,000**	2 500	ND	ND	ND
MW-3	6 24 96	7 7	0 0	670	85	20 2	396	42	532	1 0	<0 5			NA	<0 5	0 9	443	**1,464**	2 170	<0 0005	0 002	<0 00024
	6 24 97	8 2	0 0	519	78	18 0	269	63	396	1 0	<0 6	<0 6	<0 1	NA	<0 6	2 9	315	**1,160**	1 667	0 0050	0 004	<0 00002
	6 9 98	7 3	0 0	328	120	24 0	398	31	474	0 9	0 6	0 6	0 2	NA	0 6	2 4	216	**1,080**	1 562	0 001	0 005	0 0002
	7 19 99	7 3	0 0	383	124	28 0	425	27	435	<0 1	<0 2	<0 2	<0 2	NA	<0 2	3 0	205	**1,126**	1 391	ND	ND	ND
	6 20 00	NOT SAMPLED - INSUFFICIENT SAMPLE VOLUME																				
	6 25 01	NOT SAMPLED - INSUFFICIENT SAMPLE VOLUME																				
	6 11 02	NOT SAMPLED - INSUFFICIENT SAMPLE VOLUME																				
	8 18 04	7 4	ND	740	940	86 0	2 700	41	**880**	0 7	ND	ND	ND	NA	ND	5 4	360	**1,600**	1 800	ND	ND	0 00024
	6 16 05	7 4	280	NS	530	55 0	1 400	62	**870**	0 7	ND	NA	NA	NA	ND	4 1	250	**1,700**	2 200	ND	ND	ND
	10 30 06	NA	NA	NA	500	58 0	NA	67	**670**	1 1	5 7		NA	NA	ND	5 0	190	NA	NA	ND	ND	ND
	6 19 07	NA	ND	280	330	59 0	NA	170	**1,200**	0 9	ND		NA	12 0	ND	4 8	270	**3,200**	3 000	ND	ND	ND
	6 24 09	NA	ND	260	280	55 0	NA	160	**1,700**	0 9	ND		NA	NA	ND	4 7	420	**2,700**	3 000	ND	ND	ND
MW-4	6 24 96	7 2	0 0	550	458	79 7	1,472	464	**2,654**	**1.7**	<1 6			NA	<1 6	8 3	1 249	**5,430**	6 610	0 0011	0 003	<0 00024
	6 24 97	7 9	0 0	579	395	62 0	1 242	272	**2,470**	**1 9**	7 8	<1.1	<0 3	NA	<1 1	11 6	1 110	**4,710**	5 560	<0 0002	<0 004	<0 00002
	6 9 98	6 9	0 0	506	447	78 0	1 437	398	**2,701**	**1.9**	6 4	0 6	0 2	NA	0 6	11 3	1 133	**5,250**	5 930	0 001	0 005	0 0002
	7 19 99	6 9	0 0	561	467	79 0	1 491	374	**2,637**	1 6	2 9	<1.1	<0 2	NA	<0 6	12 0	1 179	**5,610**	5 530	ND	ND	ND
	6 20 00	7 0	0 0	410	110	81 0	1 400	420	**2,500**	1 4	2 5	<0.1	0 07	NA	0	20 0	930	**4,900**	5 900	<0 005	0 010	<0 0002
	6 25 01	7 5	400	400	530	83 0	1,700	450	**2,400**	1 6	2 3	ND	0 12	NA	0 8	20 0	950	**4,700**	5 600	<0 005	0 008	**0 0057**
	6 11 02	7 3	350	350	430	85 0	1 400	450	**2,300**	1 5	2 9	<0 10	0 11	NA	0 21	18 0	840	**4,700**	5 500	<0 005	0 008	<0 0002
	8 18 04	8 04	ND	380	420	58 0	1,300	150	**2,200**	1 6	ND	ND	ND	NA	ND	7 5	690	**3,800**	4 100	ND	ND	ND
	6 16 05	7 0	370	NA	330	55 0	1,100	120	**2,200**	1 5	0 56	NA	NA	NA	ND	7 9	600	**3,500**	4 300	ND	ND	ND
	10 30 06	NA	NA	NA	NA	380	63 0	NA	140	**2,000**	**1.8**	ND		NA	NA	ND	10 0	650	NA	NA	ND	ND
	6 19 07	NA	ND	310	340	51	NA	100	**1,900**	1 6	ND		NA	4 6	ND	7 5	560	**3,200**	4 000	ND	0 016	ND
	6 24 09	NA	ND	280	330	50	NA	130	**2,000**	1 5	ND		NA	NA	ND	7 3	520	**3,100**	3 400	ND	ND	ND
MW-5	6 24 96	7 5	0 0	374	216	33 2	676	19	**670**	0 7	<0 1			NA	<0 1	1 1	173	**1,332**	1 709	<0 0003	0 004	<0 00024
	6 24 97	8 2	0 0	391	177	39 0	603	47	559	0 7	<0 2	<0 2	<0 1	NA	<0 2	1 8	192	**1,260**	1 702	<0 0002	<0 004	<0 00002
	6 9 98	7 2	0 0	361	318	58 0	1,033	60	**1,378**	0 9	1 4	0 6	0 2	NA	0 6	3 9	405	**2,524**	3 050	0 001	0 005	0 0002
	7 19 99	7 2	0 0	316	213	40 0	697	65	**987**	0 9	0 5	<0 2	<0 2	NA	<0 2	3 0	363	**2,060**	2 300	ND	ND	ND
	6 20 00	7 0	0 0	220	370	68 0	1,200	200	**2,200**	0 8	0 8	<0 1	<0 05	NA	0 20	13 0	670	**3,900**	4 700	<0 005	0 023	<0 0002
	6 25 01	6 1	100	100	400	59 0	1 239	190	**1,900**	0 61	0 4	ND	0.15	NA	0 13	8 6	530	**3,500**	4 000	<0 005	0 006	**0 0025**
	6 11 02	7 5	68	68	460	84 0	1 400	360	**2,500**	0 84	0 85	<0 10	0.10	NA	0 18	13 0	660	**4,500**	5 000	<0 005	0 016	<0 0002
	8 18 04	8 1	ND	160	500	72 0	1 600	160	**2,500**	0 52	ND	ND	ND	NA	ND	6 2	660	**4,200**	4 200	ND	0 037	ND
	6 16 05	6 9	150 0	NS	500	83 0	1,600	240	**2,600**	0 54	1	NA	NA	NA	ND	8 0	640	**4,400**	5 300	ND	0 020	ND
	10 30 06	NA	NA	NA	NA	540	85 0	NA	330	**2,500**	0 51	ND		NA	NA	ND	7 2	710	NA	NA	ND	0 0062	ND
	6 19 07	NA	ND	140	490	87 0	NA	350	**2,600**	0 57	ND		NA	3 6	ND	7 0	680	**4,200**	5 400	ND	0 22	ND
	6 24 09	NA	ND	140	500	89 0	NA	400	**3,000**	0 57	ND		NA	NA	ND	7 9	740	**4,600**	4 700	ND	ND	ND
MW-6	6 24 96	8 2	0 0	399	37	10 4	135	139	**1,216**	**2.3**	<1 0			NA	<1 0	0 7	850	**2,440**	3 550	0 0009	0 007	<0 00024
	6 24 97	8 2	16 4	394	89	15 0	286	277	**1,520**	**8 0**	<0 6	<0 6	<0 6	NA	<0 6	1 9	1 010	**3,180**	4 280	<0 0002	<0 004	<0 00002
	6 9 98	8 0	0 0	425	93	18 0	306	257	**1,826**	**2 7**	1 8	0 6	0 2	NA	0 6	6 2	1 095	**3,612**	5 090	0 001	0 005	0 0002
	7 19 99	8 1	0 0	438	51	9 0	164	139	**1,176**	**2 3**	0 8	<0 6	<0 2	NA	<0 6	3 0	790	**2,588**	3 410	ND	ND	ND
	6 20 00	8 1	0 0	390	34	5 8	1,110	130	**630**	**6 3**	1 1	<0 1	<0 05	NA	0	2 4	610	**1,800**	2 800	<0 005	<0 005	<0 0002
	6 25 01	8 3	430	420	48	8 2	150	120	**290**	**5 9**	2 1	ND	0 10	NA	0 09	4 8	820	**2,300**	3 300	<0 005	0 009	0 00037
	6 11 02	8 3	450	440	48	7 7	150	170	**1,300**	**7 7**	3 2	<0 10	0 11	NA	0 12	2 4	780	**2,600**	3 600	<0 005	0 007	<0 0002
	8 18 04	8 4	16 0	640	140	18 0	480	150	**1,400**	**5.4**	ND	ND	ND	NA	ND	3 6	890	**2,800**	3 600	ND	0 021	0 00041
	6 16 05	7 9	150 0	NA	500	83 0	1,600	240	**2,600**	0 5	1 0	NA	NA	NA	ND	8 0	640	**4,400**	5 300	ND	0 020	ND
	10 30 06	NA	NA	NA	56	7 6	NA	76	**960**	**5.5**	2 4		NA	NA	ND	1 1	690	NA	NA	ND	0 019	ND
	6 19 07	NA	ND	560	44	6 8	NA	84	**1,100**	**4 6**	2 6		NA	0 6	ND	ND	720	**2,800**	3 500	ND	**0.092**	ND
	6 24 09	NA	ND	410	98	15 0	NA	210	**2,100**	**4 5**	5		NA	NA	ND	1 5	1 100	**3,900**	4 600	ND	0 007	ND

TABLE 2
CHACO GAS PLANT
GROUNDWATER ANALYTICAL RESULTS - GEOCHEMICAL PARAMETERS

Sample I D	Date	pH (unitless)	Alcalinity (CO_3) (mg/L)	Alcalinity (HCO_3) (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Total Hardness (mg/L)	Chloride (mg/L)	Sulfate (SO_4) (mg/L)	Fluoride (mg/L)	Nitrate (NO_3) (mg/L)	Nitrate (NO_3) (mg/L)	Ammonia (NH_3) (mg/L)	Bromide (mg/L)	Phosphate (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Total Dissolved Solids (mg/L)	Conductivity (umhos/cm)	Cadmium (mg/L)	Chromium (mg/L)	Mercury (mg/L)
NM WQCC Standard for Groundwater of 10,000 mg/L TDS or Less		6 to 9	NE	NE	NE	NE	NE	NE	600	1 6	10	NE	NE	NE	NE	NE	NE	1,000	NE	0 010	0 050	0.002
MW-7	6 24 96	7 4	0 0	320	302	42 9	931	295	**1,336**	**2 0**	<0 6			NA	<0 6	3 6	547	**2,860**	3 550	0 0007	0 002	<0 00024
	6 24 97	8 0	0 0	311	273	43 0	858	152	**1,180**	**3.4**	<0 6	<0 6	<0 1	NA	<0 6	5 7	386	**2,290**	2 880	0 0040	<0 004	<0 00002
	6 9 98	7 2	0 0	343	188	36 0	618	126	**998**	**2 4**	0 6	0 6	0 2	NA	0 6	5 1	414	**2,048**	2 690	0 001	0 005	0 0002
	7 19 99	7 2	0 0	406	219	42 0	720	176	**1,171**	**2 0**	<0 6	<0 6	<0 2	NA	<0 6	4 0	556	**2,700**	3 170	ND	ND	ND
	6 20 00	7 3	0 0	370	260	53 0	880	220	**1,300**	**2.7**	<0 1	<0 1	0 60	NA	0 10	7 3	620	**3,000**	3 900	<0 005	0 012	<0 0002
	6 25 01	7 3	310	310	380	74 0	1 250	180	**2,100**	**2 5**	0 14	ND	1 10	NA	0 06	7 2	610	**3,700**	2 200	<0 005	<0 005	**0.004**
	6 11 02	7 6	340	340	330	64 0	1 100	160	**2,100**	**2.9**	0 26	<0 10	0 87	NA	0 12	7 4	610	**3,500**	4 000	<0 005	0 008	<0 0002
	8 18 04	8 1	ND	550	330	50 0	1,000	120	**1,600**	**2 8**	ND	ND	0 56	NA	ND	4 4	550	**2,900**	3 300	ND	0 015	0 00024
	6 16 05	7 5	350 0	NA	270	44 0	820	140	**1,400**	**2 4**	ND	NA	NA	NA	ND	3 9	530	**2,800**	3 700	ND	ND	ND
	10 30 06	NA	NA	NA	300	52 0	NA	170	**1,500**	**3 0**	ND		NA	NA	ND	3 8	600	NA	NA	ND	0 007	ND
	6 19 07	NA	ND	320	280	47 0	NA	170	**1,700**	**2.4**	ND		NA	0 76	ND	2 2	570	**3,000**	4 000	ND	0 11	ND
	6 24 09	NA	ND	210	370	60 0	NA	420	**2,500**	**2.4**	ND		NA	NA	ND	3 2	750	**4,100**	4 400	ND	ND	ND
MW-8b	9 9 96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0 0002	<0 0057	<0 002
	9 30 97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0 002	<0 004	<0 002
	9 15 98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0 0002	<0 004	<0 0002
	9 21 99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	9 12 00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	10 16 01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0 004	0 001	0 0002
	9 20 02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	6 11 02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	8 18 04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	9 30 05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	6 19 07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	6 30 08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	6 24 09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
MW-9	9 30 97	7 8	0 0	508	60	17 2	222	60	325	**2 0**	<0 1	<0 1	<0 1	NA	<0 1	1 5	277	**1,010**	1 450	<0 002	<0 004	<0 0002
	9 15 98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0 0002	<0 004	<0 0002
MW-10	9 30 97	7 3	0 0	1,105	79	31 4	325	561	168	1 6	<0 6	<0 6	<0 3	NA	<0 6	1.7	678	**2,150**	3 190	<0 0002	<0 004	<0 0002
	9 15 98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0 0002	<0 004	<0 0002
NON CONTACT WASTE WATER	6 24 96	8 2	0 0	118	211	40 8	695	60	**740**	**2 1**	0 5			NA	4	26	128	**1,454 0**	1 744	<0 0005	**0 132**	<0 0024
	6 24 97	8 8	44 0	266	361	47 0	845	83	**754**	**2 0**	1	<0 6	<0 1	NA	<0 6	37 9	178	**1,670**	2 010	<0 002	0 034	<0 0003
	6 9 98	8 2	0 0	171	228	44 0	751	27	**766**	**1 9**	0 3	0 2	0 2	NA	0 2	27 0	110	**1,462**	1 721	0 0010	0 005	0 0002
	7 19 99	8 0	0 0	100	334	57 0	819	47	**933**	**1 9**	1	<0 01	<0 02	NA	<0 02	37 0	165	**1,814**	1,807	ND	ND	ND

mg/L - milligrams per liter µg/L - micrograms per liter

< - Denotes a concentration was not detected above the stated detection limit

Note Concentrations in **bold** and yellow exceed the applicable New Mexico WQCC Standard

Southwest GEOSCIENCE

APPENDIX E

Supporting Documentation

CHACO PLANT DOUBLE LINED
CONTACT WASTEWATER DISPOSAL POND

I. Type of Operation

The purpose of the lined ponds is to contain contact wastewater from the two new skimmers and new oil/water separator installed at Chaco Plant in Fall 1993.

II. Local Representative

Mr. David Hall
Field Services Compliance Manager
El Paso Natural Gas Company
P.O. Box 1492
El Paso, TX 79978
(915) 541-3531

III. Location of Double Lined Ponds

Chaco Plant
895 County Road 7100
Section 16, Township 26N, Range 12W
San Juan County, New Mexico
Approximately 20 miles south of Farmington

IV. Engineering Design

A. Surface Impoundment

Type of Effluent Stored :	Contact Wastewater
Volume of Effluent Stored :	Each pond contains approximately 48,605 barrels
Area:	Inside Top of Berm is 208 feet by 208 feet Bottom of Berm is 168 feet by 168 feet
Volume:	The pond was sized for an inlet flow of 12 gallons per minute.
Depth:	Eight feet at full water mark. Ten feet overall.
Slope of Pond Sides:	3:1 on outside and 2:1 on inside
Sub-Grade Description:	Native sandy loam. The soil will be wetted, if necessary, and compacted by rolling or tamping as required to provide a stable foundation for the structure.
Top Liner Type:	The top liner will be a minimum 30 mil thickness and one of the following : -Hypalon 30 HP6 or equivalent -Shelter-Rite 8130 X R5 or equivalent -Flopseal Reinforce Liner - 30 CP 6 or equivalent -Gundle High Density Polyethylene- 60 mil or equivalent

Bottom Liner Type:	The bottom liner will be one of the following: -Oil resistant PVC-20 mil or equivalent -High Density Polyethylene- 20 mil or equivalent -Chlorinated Polyethylene- 20 mil or equivalent -Chlorosulfonated Polyethylene- 20 mil or equivalent
Intermediate Liner:	Fibertex Grade " 600 " Geotextile or equivalent
Coarse Filter Cover:	Mirafi "140 " drainage fabric or equivalent.
Top Liner Thickness:	Minimum 30 mil
Bottom Liner Thickness:	Minimum 20 mil
Compatibility of Liner & Effluent:	A liner will be chosen that is compatible with the effluent .
Freeboard:	Two feet.
Runoff/Runon Protection:	The pond will located approximately 1 1/2 feet above surrounding terrain. The final area around the pond will be graded to prevent stormwater runoff into the pond.

B. Design and Construction

1. Location

This pond will not be located in any water course, lakebed, sink-hole, or other depression.

2. Design and Construction

a. The evaporation pond was designed and will be constructed to provide the minimum evaporative surface area needed for the maximum yearly volume of liquid to be discharged to the pond. The design was based on local climatological data. Special care was taken when calculating the pond volume to account for the decrease in the evaporation rate during the winter months.

b. The design freeboard allowance will be two feet over the estimated high water level in order to prevent overtopping due to wave action.

c. The pond will be constructed so that the inside grade of the levee is no steeper than 2:1. Levees will have an outside grade no steeper that 3:1.

d. The top of the levees shall be level and shall be at least eighteen inches wide.

e. An enhanced evaporation system will be operated and designed so that water does not leave the bermed area. A pump located on the bank of the pond with about 10 horsepower motor will circulate water through a PVC piping system with umbrella head sprayers for each pond.

f. Upon completion of construction "as-built" completion diagrams certified by a registered professional engineer will be submitted including the locations and top-of-pipe elevations of leak detection wells.

3. Synthetically Lined Evaporation Ponds

a. Materials

The synthetic materials used shall be impermeable and flexible.

The top liner will be a minimum 30 mil thickness and will have good resistance to tears or punctures.

The liner will be resistant to hydrocarbons, salts, and acidic and alkaline solutions. The liner will be resistant to ultraviolet light.

The disposal pond shall incorporate a double liner system with a leak detection system installed between the primary and secondary liner.

b. Leak Detection System

(1) The Aztec OCD office will be notified at least 24 hours in advance of the scheduled installation of the primary liner to afford the opportunity for a Division representative to inspect the leak detection system.

(2) A drainage and sump system will be used with a network of slotted or perforated drainage pipes between the primary and secondary liners. The network shall be of sufficient density so that no point in the pond bed is more that twenty feet (20') from such drainage pipe or lateral thereof. The material, 3/4" to 1" gravel, will be placed between the pipes and laterals and is sufficiently permeable to allow transport of the fluids to the drainage pipe. The slope for all drainage lines and laterals will be at least six inches (6") per fifty feet (50'). The slope of the pond bed will also conform to these values to assure fluid flow towards the leak detection system. The drainage pipe shall convey any fluids to a corrosion-proof sump located outside the perimeter of the pond.

c. Preparation of Pond Bed for Installation of Liners

(1) The bed of the pond and inside grade of the levee will be smooth and compacted, free of holes, rocks, stumps, clods, or any other debris which may rupture the liner. The proposed area of the pond is not rocky.

(2) A trench will be excavated on the top of the levee the entire perimeter of the pond for the purpose of anchoring flexible liners. This trench shall be located at least 9 inches from the slope break and will be at least 12 inches deep.

(3) The liner will rest smoothly on the pond bed and the inner face of the levees, and will be sufficient size to extend down to the bottom of the anchor trench and come back out greater than two inches from the trench on the side furthest from the pond.

(4) Native soil will be used an anchor and will be placed over the liner in the anchor trench and the trench back-filled. The anchor trench will extend the entire perimeter of the pond. All swelling soils (soils with plasticity index of 20 or more) will be sprinkled as required to provide not less than 98% nor more than 102% of the maximum density as determined in accordance with ASTM D698. Field density determinations will be made in accordance with ASTM 2922, ASTM 2167, or ASTM 1556.

4. Fences, Signs, and Netting

a. A ponds will be located within the Chaco Plant fenced area. The Chaco Plant fence was constructed so as to prevent livestock from entering the facility area.

b. El Paso Natural Gas Company respectfully requests an exception to Division Order R-8952. Under normal operating conditions this pond would not contain oil and thus would not constitute a water fowl hazard. If any oil or hydrocarbons reach this facility the following measures will be followed : In 72 hours from discovery, measures to remove the oil will be initiated.

5. Affirmation

I hereby certify that I am familiar with the information contained in and submitted with this surface impoundment plan for Chaco Plant and that such information is true, accurate, and complete to the best of my knowledge and belief.

Anu Pundari — 8/16/94

Anu Pundari
Sr. Compliance Engineer

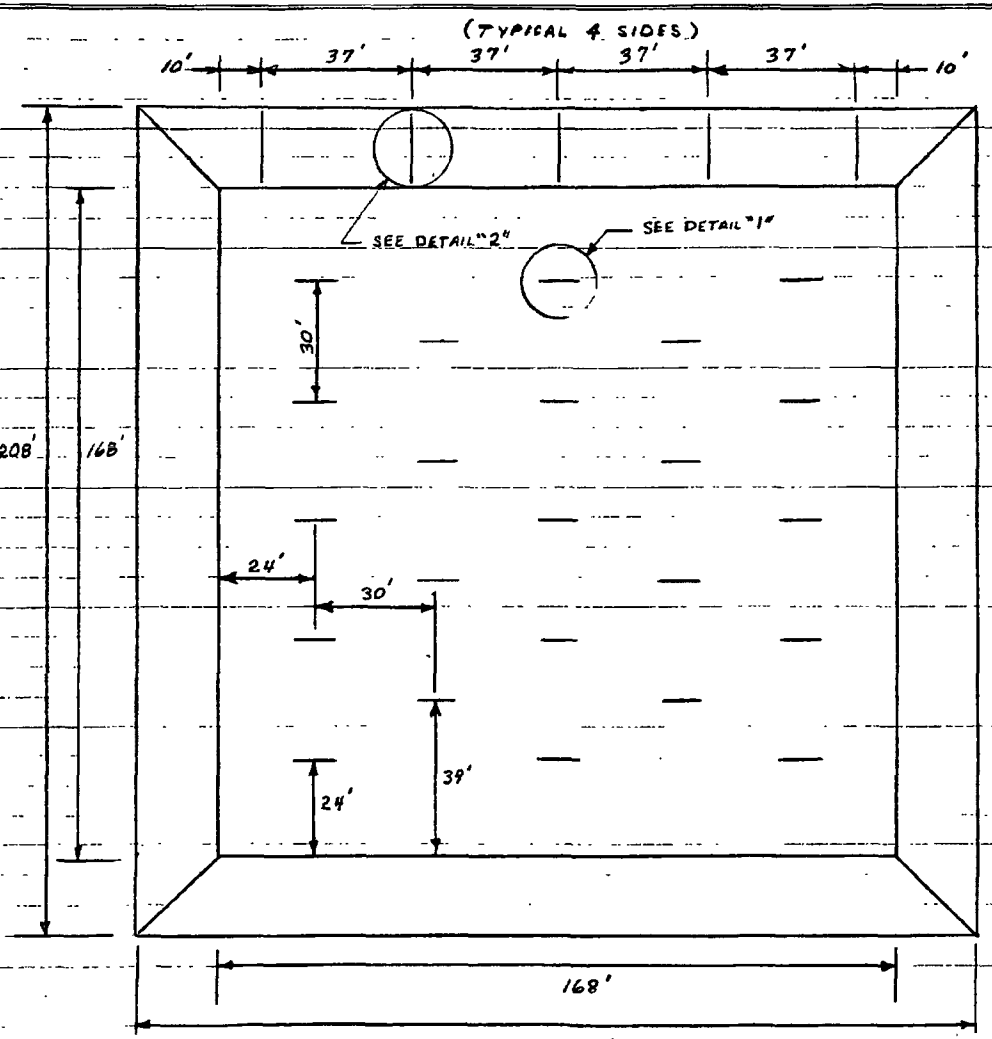
Date

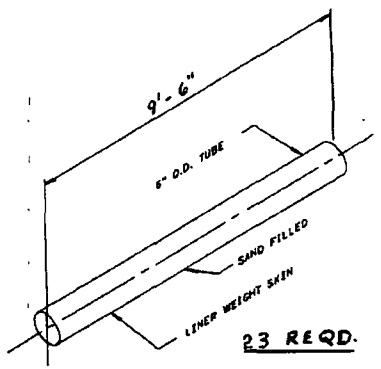
Form 7-171 (2-65)

ENGINEERING ANALYSIS

Sheet No.
Date 8/11/94
Preliminary
Final
By Chk

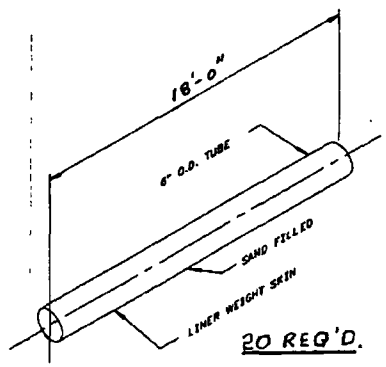
PROJECT CHACO LINED PONDS SKETCH #4
SUBJECT POND LINER WEIGHTS
POND BOTTOM & SIDES (2 REQ'D)





23 REQD.

DETAIL "1"
POND LINER WEIGHT
SCALE: NONE

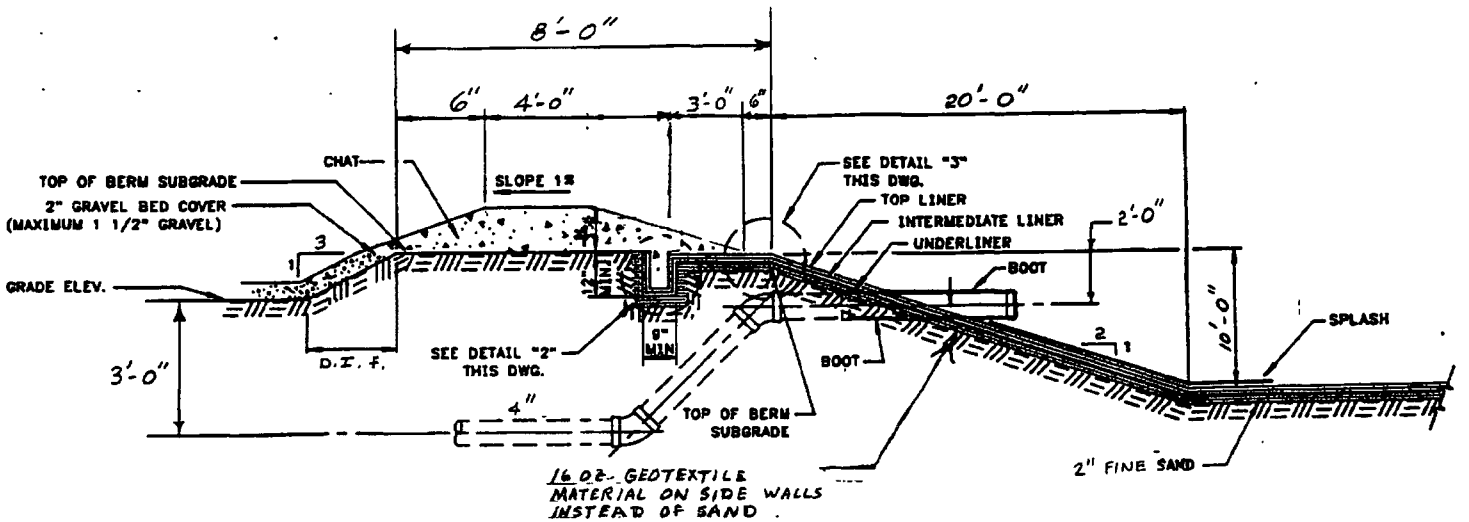


20 REQ'D.

DETAIL "2"
POND LINER WEIGHT
SCALE: NONE

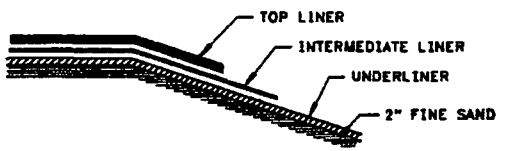
CHACO LINED POND SKETCH #5

8/11/14



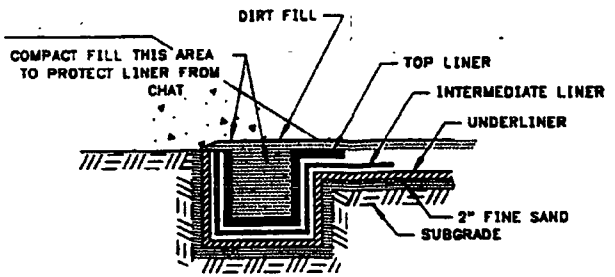
POND INLET

SCALE: NONE



DETAIL "3"

THIS DWG.
SCALE: NONE



DETAIL "2"

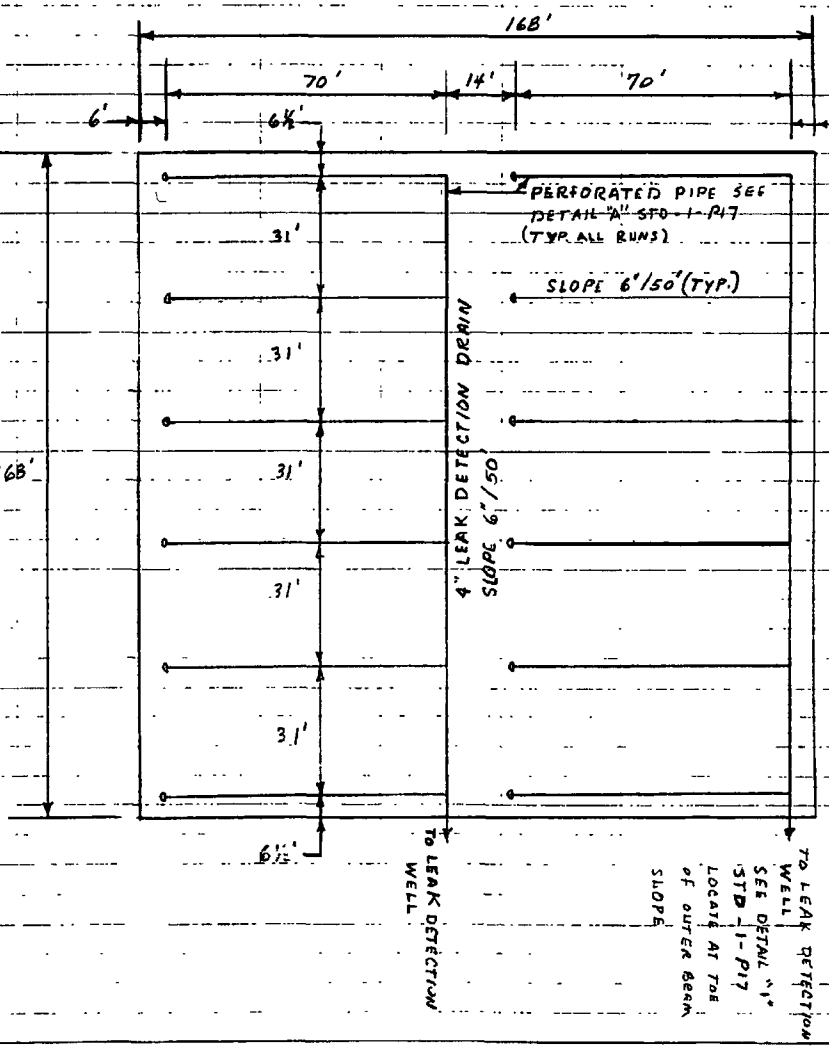
THIS DWG.
SCALE: NONE

Form 7-171 (2-55)

ENGINEERING ANALYSIS

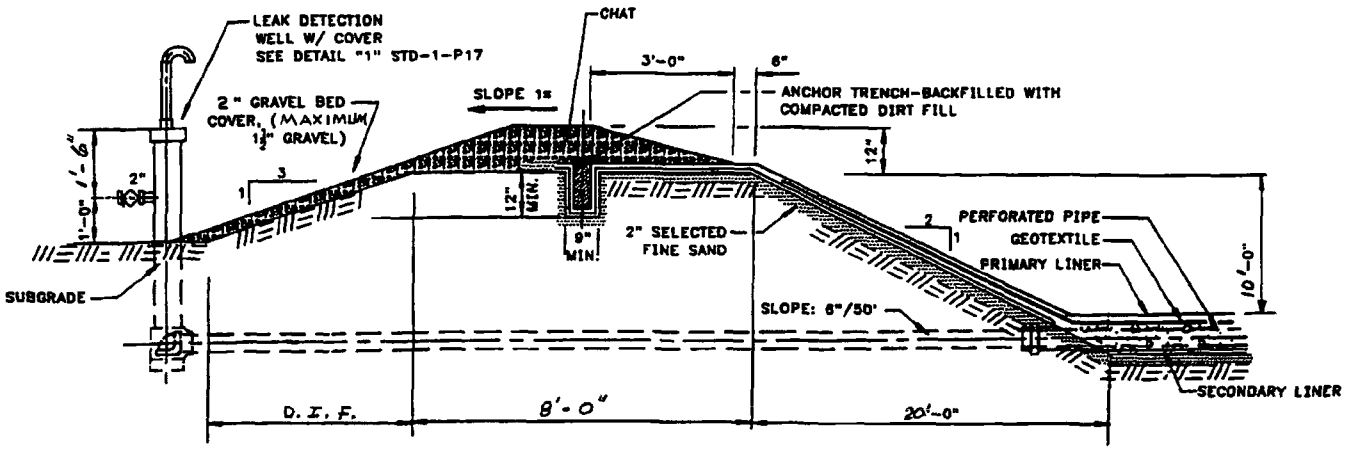
Sheet No. ____
Date 8/11/94
Preliminary ____
Final ____
By ____ Chk ____

PROJECT CHACO LINED PONDS SKETCH #3
SUBJECT LEAK DETECTION SYSTEM
LINER BOTTOM (2 REQUIRED)



NOTE: ALL CONNECTIONS THROUGH PRIMARY LINER OR SECONDARY LINERS SHALL HAVE A LINER BOOT DETAIL "B" STD-1-P17

(2) 4" POND INLETS
COMPLETE WITH SPASH GUARD
INLET @ 2' BELOW TOP OF BERM
TIE TO BOOT - EXTEND 3'-0"
INTO POND BOTTOM
WIDTH AT BOTTOM 9'-0"



SECTION "A-A"

SCALE: NONE

NO.	DATE	BY	DESCRIPTION	W.O.	APP.
			REVISIONS		

PRT.	SEP.	DATE	TO	W.O.
PRINT RECORD				

ENG. RECORD		DATE
DRAFTING DESIGN	JN	1/28/87
COMPUTER GRAPHICS	MD	6/29/87
CHECKED		
PROJECT APPROVAL		
DESIGN APPROVAL		
COMPUTER SAVE NAME	STD117	

El Paso NATURAL GAS COMPANY

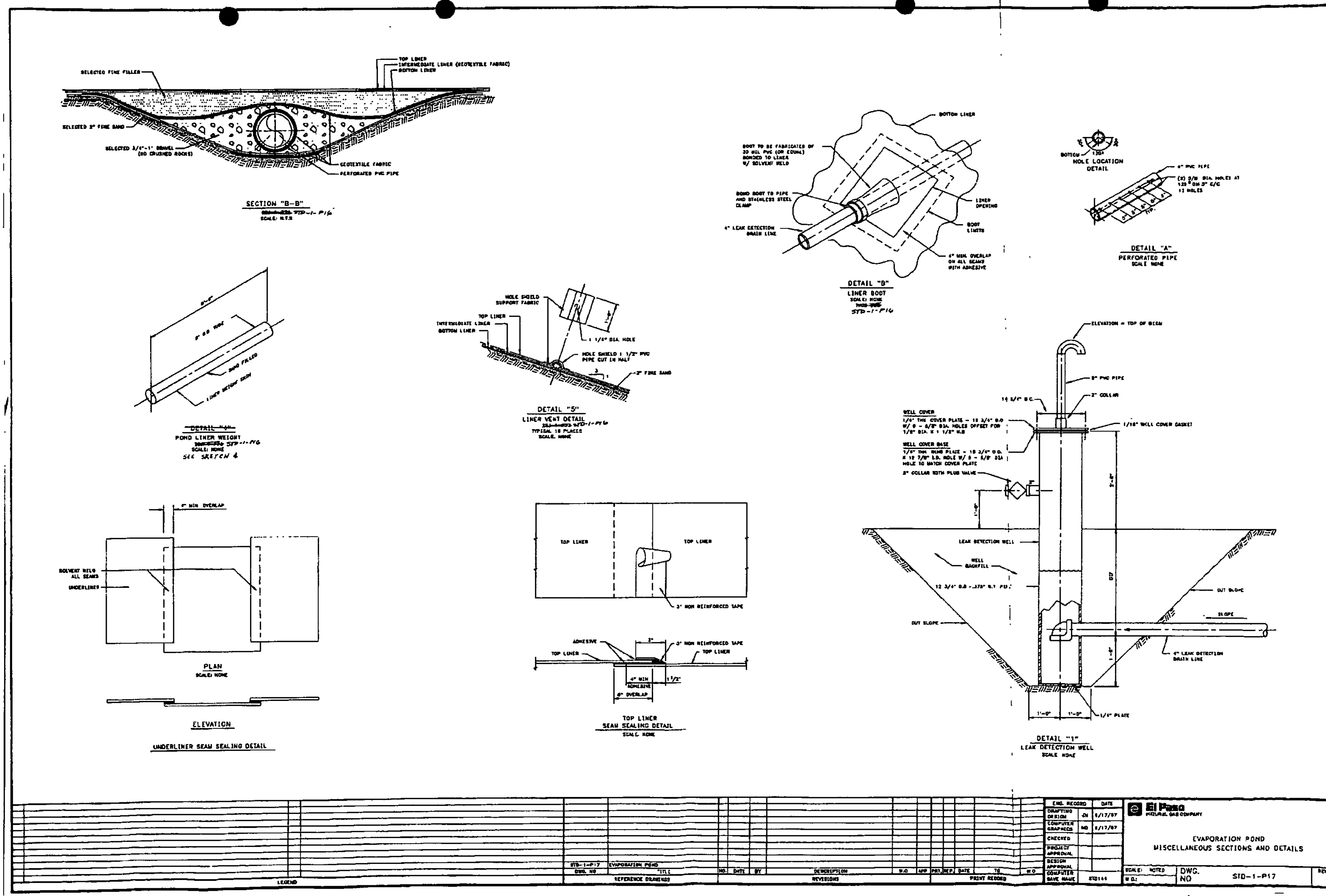
EVAPORATION POND
PLANS AND SECTIONS

SCALE: NOTED

W.O.:

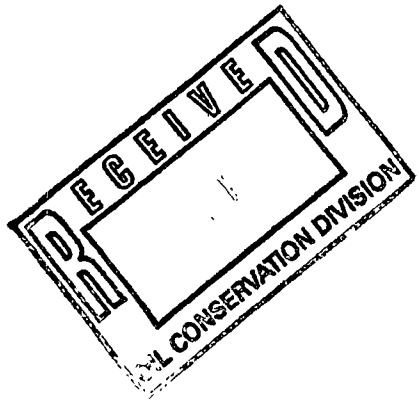
DWG. NO. STD-1-P16

REV. 1


TOP LINER
INTERMEDIATE LINER (GEOTEXTILE FABRIC)
BOTTOM LINER
SELECTED FINE FILLER
SELECTED 2" FINE SAND
SELECTED 3/4"-1" GRAVEL (NO CRUSHED ROCKS)
GEOTEXTILE FABRIC
PERFORATED PVC PIPE
SECTION "B-B"
STD-1-P16
SCALE: N.T.S
DETAIL "4"
POND LINER WEIGHT
STD-1-P16
SCALE: NONE
SEE SKETCH 4
SAND FILLED
DETAIL "5"
LINER VENT DETAIL
STD-1-P16
TYPICAL 18 PLACES
SCALE: NONE
HOLE SHIELD SUPPORT FABRIC
INTERMEDIATE LINER
1 1/4" DIA. HOLE
HOLE SHIELD 1 1/2" PVC PIPE CUT IN HALF
2" FINE SAND
BOOT TO BE FABRICATED OF 30 MIL PVC (OR EQUAL) BONDED TO LINER W/ SOLVENT WELD
BOND BOOT TO PIPE AND STAINLESS STEEL CLAMP
4" LEAK DETECTION DRAIN LINE
LINER OPENING
BOOT LIMITS
4" MIN. OVERLAP ON ALL SEAMS WITH ADHESIVE
DETAIL "B"
LINER BOOT
SCALE: NONE
STD-1-P16
BOTTOM
120°
HOLE LOCATION DETAIL
4" PVC PIPE
(2) 5/8 DIA. HOLES AT 120° ON 3" C/C
12 HOLES
DETAIL "A"
PERFORATED PIPE
SCALE NONE
ELEVATION = TOP OF BERM
2" PVC PIPE
2" COLLAR
14 3/4" B.C.
WELL COVER
1/4" THK. COVER PLATE - 18 3/4" O.D W/ 8 - 5/8" DIA. HOLES OFFSET FOR 1/2" DIA. X 1 1/2" M.B
1/16" WELL COVER GASKET
WELL COVER BASE
1/4" THK. RING PLATE - 18 3/4" O.D. X 12 7/8" I.D. HOLE W/ 8 - 5/8" DIA HOLE TO MATCH COVER PLATE
2" COLLAR WITH PLUG VALVE
LEAK DETECTION WELL
WELL BACKFILL
12 3/4" O.D - .375" W.T PIPE
CUT SLOPE
SLOPE
4" LEAK DETECTION DRAIN LINE
1'-0"
1/4" PLATE
DETAIL "1"
LEAK DETECTION WELL
SCALE NONE
4" MIN OVERLAP
SOLVENT WELD ALL SEAMS
UNDERLINER
PLAN
SCALE: NONE
ELEVATION
UNDERLINER SEAM SEALING DETAIL
TOP LINER
3" NON REINFORCED TAPE
ADHESIVE
4" MIN ADHESIVE
6" OVERLAP
1 1/2"
TOP LINER
SEAM SEALING DETAIL
SCALE NONE
LEGEND
STD-1-P17
EVAPORATION POND
DWG. NO
TITLE
REFERENCE DRAWINGS
NO. DATE BY DESCRIPTION W.O APP PRT. REP. DATE TO W.O
REVISIONS
PRINT RECORD
ENG. RECORD DATE
DRAFTING DESIGN
COMPUTER GRAPHICS
CHECKED
PROJECT APPROVAL
DESIGN APPROVAL
COMPUTER SAVE NAME
El Paso NATURAL GAS COMPANY
EVAPORATION POND
MISCELLANEOUS SECTIONS AND DETAILS
SCALE: NOTED
W.O.:
DWG. NO
STD-1-P17
REV.

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,

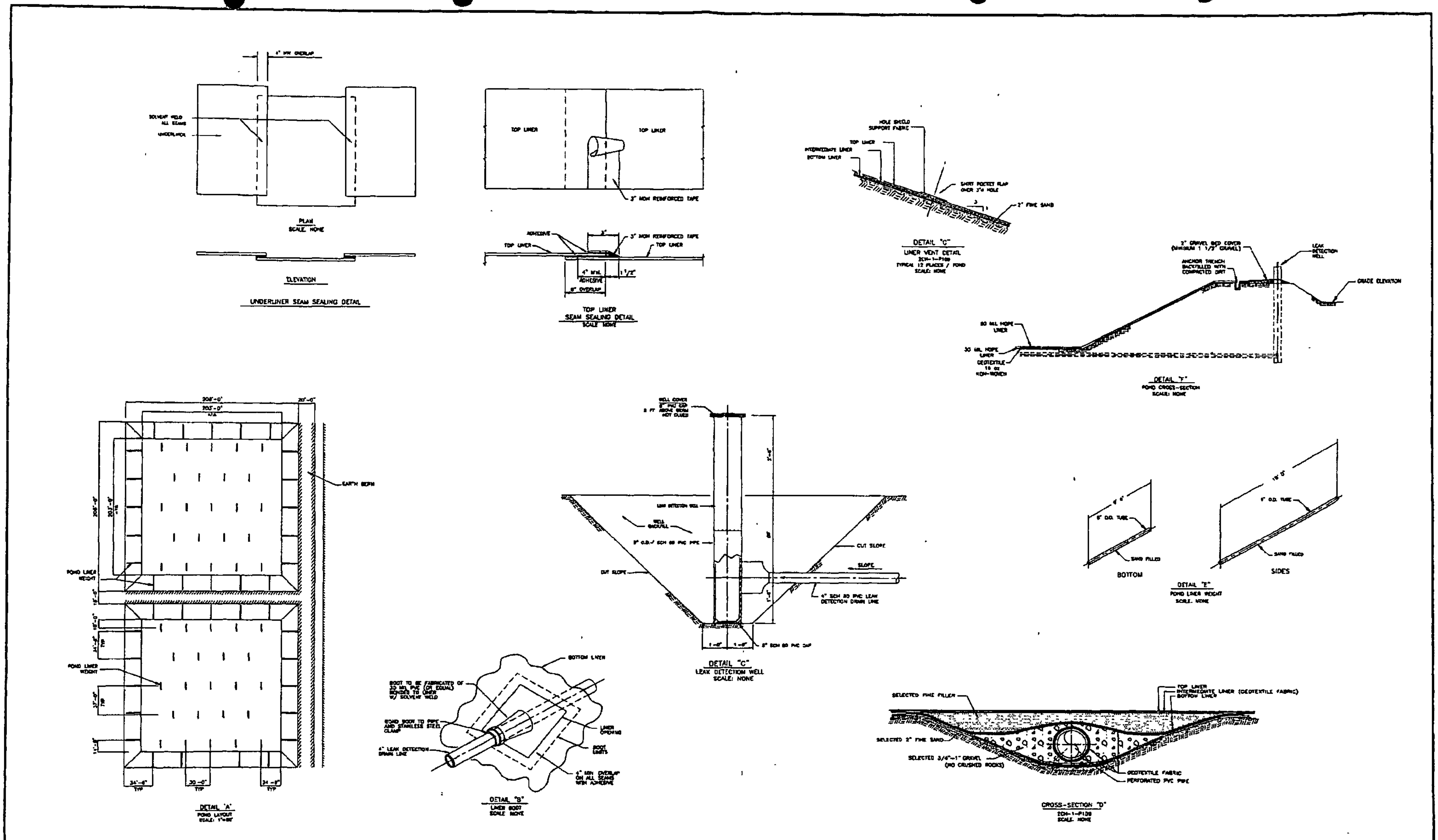
P. S. Marquez

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



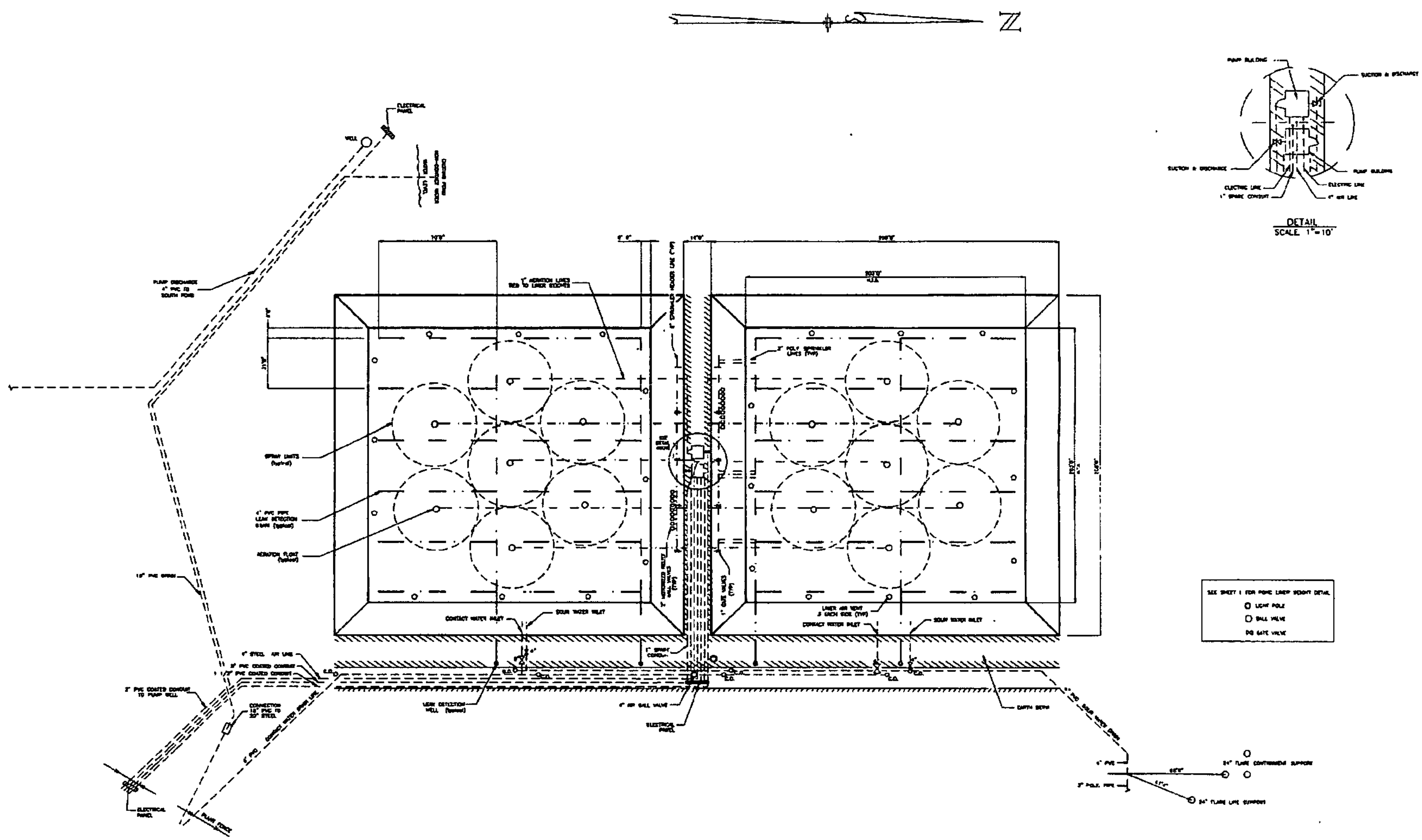
LEGEND	REFERENCE DRAWINGS	REVISIONS	PRINT RECORD
	2CH-1-P108 — CHACO PLANT – EVAP. PONDS – AS BUILTS		
	DWG. NO. — TITLE	NO. — DATE — BY — DESCRIPTION — W.O. — APP — PRT — SEP — DATE — TO — W.O.	

ENG. RECORD		DATE
DRAFTING		
DESIGN		
ENGINEER AS BUILT DRAFTING	BL	03/22/93
CHECKED		
PROJECT APPROVAL		
DESIGN APPROVAL		
COMPUTER SAVE NAME	2CH1P108	

El Paso Natural Gas Company

CHACO PLANT
EVAPORATION PONDS
AS-BUILT DETAILS

SCALE: SHOWN
W.O.: L3633
DWG. NO 2CH-1-P108
REV



El Paso Natural Gas Company

CHACO PLANT
EVAPORATION PONDS
AS-BUILT

DWG. RECORD		DATE
DRAFTING DESIGN		
COMPUTER AIDED DRAFTING	BL	03/17/95
CHECKED		
PROJECT APPROVAL		
DESIGN APPROVAL		5/3/95
COMPUTER SAVE NAME	2CH1P109	

SCALE: 1"=30'
DWG. NO. 2CH-1-P109

REFERENCE DRAWINGS: 2CH-1-P108 CHACO PLANT - EVAP. PONDS AS-BUILT DETAILS

LEGEND | REFERENCE DRAWINGS | REVISIONS | PRINT RECORD

Bill Richardson
Governor
Joanna Prukop
Cabinet Secretary

GW-071
PERMITS

July 14, 2009

Mr. Clay Roesler
P.O. Box 2521
Houston, Texas 77252-2521

Re: Discharge Permit Renewal
Chaco Gas Plant (GW-071)
SE/4 Section 16, Township 26 North, Range 12 West, NMPM
San Juan County, New Mexico

Dear Mr. Roesler:

Pursuant to Water Quality Control Commission (WQCC) Regulations 20.6.2.3104 - 20.6.2.3114 NMAC, the Oil Conservation Division (OCD) hereby approves **Enterprise Field Services, LLC./Enterprise Products Operating LLC.** discharge permit for the above referenced site contingent upon the conditions specified in the enclosed **Attachment to the Discharge Permit**. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 days of receipt of this letter including permit fees.**

Please be advised that approval of this permit does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If you have any questions, please contact Leonard Lowe of my staff at (505-476-3492) or E-mail leonard.lowe@state.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge permit review.

Sincerely,

Glenn von Gonten
Acting Environmental Bureau Chief

Attachments-1
xc: OCD District Office

ATTACHMENT- DISCHARGE PERMIT APPROVAL CONDITIONS

1. **Payment of Discharge Plan Fees:** All discharge permits are subject to WQCC Regulations. Every billable facility that submits a discharge permit application will be assessed a filing fee of $100.00, plus a flat fee (*see* WQCC Regulation 20.6.2.3114 NMAC). The Oil Conservation Division ("OCD") has received the required $100.00 filing fee. The flat fee for a gas plant is $4000.00. Return a signed copy of the permit conditions within 30 days. Checks should be made out to the New Mexico Water Quality Management Fund.

2. **Permit Expiration, Renewal Conditions and Penalties:** Pursuant to WQCC Regulation 20.6.2.3109.H.4 NMAC, this permit is valid for a period of five years. **The permit will expire on May 18, 2012** and an application for renewal should be submitted no later than 120 days before that expiration date. Pursuant to WQCC Regulation 20.6.2.3106.F NMAC, if a discharger submits a discharge permit renewal application at least 120 days before the discharge permit expires and is in compliance with the approved permit, then the existing discharge permit will not expire until the application for renewal has been approved or disapproved. ***Expired permits are a violation of the Water Quality Act (Chapter 74, Article 6, NMSA 1978) and civil penalties may be assessed accordingly.***

3. **Permit Terms and Conditions:** Pursuant to WQCC Regulation 20.6.2.3104 NMAC, when a permit has been issued, the owner/operator must ensure that all discharges shall be consistent with the terms and conditions of the permit. In addition, all facilities shall abide by the applicable rules and regulations administered by the OCD pursuant to the Oil and Gas Act, NMSA 1978, Sections 70-2-1 through 70-2-38.

4. **Owner/Operator Commitments:** The owner/operator shall abide by all commitments submitted in its December 2008 discharge plan application, including attachments and subsequent amendments and these conditions for approval. Permit applications that reference previously approved plans on file with the division shall be incorporated in this permit and the owner/operator shall abide by all previous commitments of such plans and these conditions for approval.

5. **Modifications:** WQCC Regulation 20.6.2.3107.C and 20.6.2.3109 NMAC addresses possible future modifications of a permit. The owner/operator (discharger) shall notify the OCD of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants. The Division Director may require a permit modification if any water quality standard specified at 20.6.2.3103 NMAC is being or will be exceeded, or if a toxic pollutant as defined in WQCC Regulation 20.6.2.7 NMAC is present in ground water at any place of withdrawal for present or reasonably foreseeable future use, or that the Water Quality Standards for Interstate and Intrastate streams as specified in 20.6.4 NMAC are being or may be violated in surface water in New Mexico.

6. **Waste Disposal and Storage:** The owner/operator shall dispose of all wastes at an OCD-approved facility. Only oil field RCRA-exempt wastes may be disposed of by injection in a Class II well. RCRA non-hazardous, non-exempt oil field wastes may be disposed of at an OCD-approved facility upon proper waste determination pursuant to 40 CFR Part 261. Any waste stream that is not listed in the discharge permit application must be approved by the OCD on a case-by-case basis.

A. **OCD Part 35 Waste:** Pursuant to OCD Part 35 (19.15.35.8 NMAC) disposal of certain non-domestic waste without notification to the OCD is allowed at NMED permitted solid waste facilities if the waste stream has been identified in the discharge permit and existing process knowledge of the waste stream does not change.

B. **Waste Storage:** The owner/operator shall store all waste in an impermeable bermed area, except waste generated during emergency response operations for up to 72 hours. All waste storage areas shall be identified in the discharge permit application. Any waste storage area not identified in the permit shall be approved on a case-by-case basis only. The owner/operator shall not store oil field waste on-site for more than 180 days unless approved by the OCD.

7. **Drum Storage:** The owner/operator must store all drums, including empty drums, containing materials other than fresh water on an impermeable pad with curbing. The owner/operator must store empty drums on their sides with the bungs in place and lined up on a horizontal plane. The owner/operator must store chemicals in other containers, such as tote tanks, sacks, or buckets on an impermeable pad with curbing.

8. **Process, Maintenance and Yard Areas:** The owner/operator shall either pave and curb or have some type of spill collection device incorporated into the design at all process, maintenance, and yard areas which show evidence that water contaminants from releases, leaks and spills have reached the ground surface.

9. **Above Ground Tanks:** The owner/operator shall ensure that all aboveground tanks have impermeable secondary containment (e.g., liners and berms), which will contain a volume of at least one-third greater than the total volume of the largest tank or all interconnected tanks. The owner/operator shall retrofit all existing tanks before discharge permit renewal. Tanks that contain fresh water or fluids that are gases at atmospheric temperature and pressure are exempt from this condition.

10. **Labeling:** The owner/operator shall clearly label all tanks, drums, and containers to identify their contents and other emergency notification information. The owner/operator may use a tank code numbering system, which is incorporated into their emergency response plans.

11. **Below-Grade Tanks/Sumps and Pits/Ponds.**

A. All below-grade tanks and sumps must be approved by the OCD prior to installation and must incorporate secondary containment with leak detection into the design. The owner/operator shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal. All existing below-grade tanks and sumps without secondary containment and leak detection must be tested annually or as specified herein. Systems that have secondary containment with leak detection shall have a monthly inspection of the leak detection system to determine if the primary containment is leaking. Small sumps or depressions in secondary containment systems used to facilitate fluid removal are exempt from these requirements if fluids are removed within 72 hours.

B. All pits and ponds, including modifications and retrofits, shall be designed by a certified registered professional engineer and approved by the OCD prior to installation. In general, all pits or ponds shall have approved hydrologic and geologic reports, location, foundation, liners, and secondary containment with leak detection, monitoring and closure plans. All pits or ponds shall be designed, constructed and operated so as to contain liquids and solids in a manner that will protect fresh water, public health, safety and the environment for the foreseeable future. The owner/operator shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal.

C. The owner/operator shall ensure that all exposed pits, including lined pits and open top tanks (8 feet in diameter or larger) shall be fenced, screened, netted, or otherwise rendered non-hazardous to wildlife, including migratory birds.

D. The owner/operator shall maintain the results of tests and inspections at the facility covered by this discharge permit and available for OCD inspection. The owner/operator shall report the discovery of any system which is found to be leaking or has lost integrity to the OCD within 15 days. The owner/operator may propose various methods for testing such as pressure testing to 3 pounds per square inch greater than normal operating pressure and/or visual inspection of cleaned tanks and/or sumps, or other OCD-approved methods. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

12. Underground Process/Wastewater Lines:

A. The owner/operator shall test all underground process/wastewater pipelines at least once every five (5) years to demonstrate their mechanical integrity, except lines containing fresh water or fluids that are gases at atmospheric temperature and pressure. Pressure rated pipe shall be tested by pressuring up to one and one-half times the normal operating pressure, if possible, or for atmospheric drain systems, to 3 pounds per square inch greater than normal operating pressure, and pressure held for a minimum of 30 minutes with no more than a 1% loss/gain in pressure. The owner/operator may use other methods for testing if approved by the OCD.

B. The owner/operator shall maintain underground process and wastewater pipeline schematic diagrams or plans showing all drains, vents, risers, valves, underground piping, pipe type, rating, size, and approximate location. All new underground piping must be approved by the OCD prior to installation. The owner/operator shall report any leaks or loss of integrity to the OCD within 15 days of discovery. The owner/operator shall maintain the results of all tests at the facility covered by this discharge permit and they shall be available for OCD inspection. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

13. Class V Wells: The owner/operator shall close all Class V wells (e.g., septic systems, leach fields, dry wells, etc.) that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes unless it can be demonstrated that ground water will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD-regulated facilities that inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only, must be permitted by the New Mexico Environment Department (NMED).

14. Housekeeping: The owner/operator shall inspect all systems designed for spill collection/prevention and leak detection at least monthly to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices shall be emptied of fluids within 72 hours of discovery. The owner/operator shall maintain all records at the facility and available for OCD inspection.

15. Spill Reporting: The owner/operator shall report all unauthorized discharges, spills, leaks and releases and conduct corrective action pursuant to WQCC Regulation 20.6.2.1203 NMAC and OCD Part 29 (19.15.29 NMAC). The owner/operator shall notify both the OCD District Office and the Santa Fe Office within 24 hours and file a written report within 15 days. The OCD does not consider covering contaminated areas a remediation of the spill/release.

16. OCD Inspections: The OCD performed an inspection of this facility on June 11, 2009. Mr. Don Fernald and Mr. Max Blackwood witnessed the inspection. All photographs referenced below are located in the attachment of this permit. As a result of this, OCD inspection concluded the following:

1. **Photo 1 – 4:** Two lined produced water ponds are located on the east side of the facility grounds and were found to have fluids within their leak detection system. Owner/operator shall immediately investigate the cause of fluids within the system. The second pond, (photo 3) has oil present. Owner/operator shall remove any oil from the pond immediately and properly dispose of.
2. **Photo 5 – 6:** An unused below-grade tank is empty and its leak detection system was verified dry. Owner/Operator shall identify tank as not in use.
3. **Photo 7:** Owner/operator shall identify this conduit and its purpose. At the time of inspection it was unidentifiable.
4. **Photo 8 – 13:** Several sumps were holding liquids and had sediment. This was previously noted in the July 17, 2002 OCD inspection. All sumps are meant to catch fluids and must be drained within 72 hours. Owner/operator shall keep these sumps cleaned.
5. **Photo 14 – 15:** The secondary corner sealants were deteriorating. Owner/operator shall fix all breaches within the containment.
6. **Photo 16 – 17:** This air compressor below-grade tank had fluids within its leak detection system. Owner/operator shall determine why fluids are collecting in the leak detection system and verify tank integrity. The discharge plan application noted in section 10. (Inspection, Maintenance and Reporting) that all tanks were to be inspected on a monthly basis. At the time of inspection OCD determines that these leak detection systems had not been inspected. Owner/operator shall, record and report any releases of these below-grade tanks on a routine basis.
7. **Photo 18 – 22:** These below-grade tanks were verified to have no fluids within its leak detection system. BGT, (photo 10) had no covering. Owner/operator shall properly cover all below grade tanks as to prevent unnecessary accumulation of fluids and overflow.
8. **Photo 23 – 26:** The staging area for used filter drainage had standing fluids and containment problems. Photo 26 shows fluids from the containment area seeping through the blocks. Owner/operator shall remove the fluids and clean the containment

area and then investigate the failed integrity of the containment. Owner/operator shall submit all findings and conclusions to the OCD.

9. **Photo 27 – 31:** There were several areas with visible stained soils within the facility's yard. Owner/operator shall follow best management practices to prevent such future discharges. When such discharges occur owner/operator shall address them in accordance with the discharge plan application. These stained areas were noted in the July 17, 2002 inspection.
10. **Photo 33 – 38:** There are two unlined ponds on the north part of the facility and an unused lined pond adjacent to the two. After the July 17, 2002 inspection, OCD required the owner/operator to submit a closure plan for the contact water pond, but we have not received it. Owner/operator will submit a closure plan for the unused lined pond in photo 35 – 37.
11. **Photo 38 – 39:** There were several piles of spent carbon filter media lying on the ground. OCD was informed that they have been there for an extended period of time. Condition 6.B indicates that no waste shall be on site greater than 180 days unless granted permission by the OCD. Owner/operator shall dispose of all waste in accordance with its permit.

Enterprise shall resolve all **items by September 4, 2009** and submit their findings to the OCD for review.

17. **Storm Water:** The owner/operator shall implement and maintain run-on and runoff plans and controls. The owner/operator shall not discharge any water contaminant that exceeds the WQCC standards specified in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) including any oil sheen in any stormwater run-off. The owner/operator shall notify the OCD within 24 hours of discovery of any releases and shall take immediate corrective action(s) to stop the discharge.

18. **Unauthorized Discharges:** The owner/operator shall not allow or cause water pollution, discharge or release of any water contaminant that exceeds the WQCC standards listed in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) unless specifically listed in the permit application and approved herein. ***An unauthorized discharge is a violation of this permit.***

19. **Vadose Zone and Water Pollution:** The owner/operator shall address any contamination through the discharge permit process or pursuant to WQCC 20.6.2.4000-.4116 NMAC (Prevention and Abatement of Water Pollution). The OCD may require the owner/operator to modify its permit for investigation, remediation, abatement, and monitoring requirements for any vadose zone or water pollution. Failure to perform any required investigation, remediation, abatement and submit subsequent reports will be a violation of the permit.

20. **Additional Site Specific Conditions:** N/A

21. **Transfer of Discharge Permit (WQCC 20.6.2.3111)** Prior to any transfer of ownership, control, or possession (whether by lease, conveyance or otherwise) of a facility with a discharge permit, the transferor shall notify the transferee in writing of the existence of the discharge permit, and shall deliver or send by certified mail to the department a copy of such written

notification, together with a certification or other proof that such notification has in fact been received by the transferee.

Upon receipt of such notification, the transferee shall have the duty to inquire into all of the provisions and requirements contained in such discharge permit, and the transferee shall be charged with notice of all such provisions and requirements as they appear of record in the department's file or files concerning such discharge permit. The transferee (new owner/operator) shall sign and return an original copy of these permit conditions and provide a written commitment to comply with the terms and conditions of the previously approved discharge permit.

22. Closure Plan and Financial Assurance: Pursuant to 20.6.2.3107 NMAC an owner/operator shall notify the OCD when any operations of the facility are to be discontinued for a period in excess of six months. Prior to closure, or as a condition of this permit, or request from the OCD, the operator will submit an approved closure plan, modified plan, and/or provide adequate financial assurance.