BURLINGTON RESOURCES

SAN JUAN DIVISION

October 28, 1998

BEFORE EXAMINER
OIL CONSERVATION DIVISION
OCD EXHIBIT NO. 2
CASE NO. 12033

Certified: P 103 693 144

Mr. Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

29

RE: Hampton 4M
Unit Letter N, Section 13, Township 30N, Range 11W

Dear Mr. Olson:

Your September 1, 1998 letter to Burlington Resources (BR) requested that BR submit a remediation and monitoring work plan for groundwater contaminated as a result of BR's activities at the subject well location.

In the process of gathering additional information to determine the source(s) of groundwater contamination, BR drilled two soil borings on the Hampton 4M location. The borings, one near BR's excavation and one near Public Service of New Mexico's (PNM's) former dehydrator pit, were drilled down to the groundwater. The soil borings confirmed that a substantial amount of soil contamination remains in place in the area of PNM's operations and, to a much lesser extent, near BR's pit area that was previously remediated. It also appears that the contamination associated with PNM's operations is migrating not only downgradient into groundwater, but also upgradient through sand lenses in the soils. In this regard, BR believes that no effort to clean up the groundwater at this site will be effective until the area surrounding the old PNM unlined dehydrator pit is remediated.

As a result of these recent findings, BR has submitted a letter dated October 26, 1998 to PNM concerning the Hampton 4M well. As the letter states, BR has requested PNM to immediately begin the remediation of the contamination at the Hampton 4M location. If PNM does not agree to undertake this action by Friday, October 30, then BR is prepared to immediately remediate the contamination on the entire location, including the pit area where PNM's operations took place.

In the event that PNM does not initiate action to clean up its contamination by Friday, October 30, BR will conduct source removal work for the entire Hampton 4M location, starting in the area of PNM's former dehydrator pit and working towards the old BR pit area. A PID and/or lab analyses will be utilized to determine the extent of the excavation. Clean overburden will be stockpiled on location or used as fill. Impacted soil that is excavated will be landfarmed on BR locations (i.e., within the same lease) or will be disposed at a permitted commercial disposal facility.

Upon the completion of the source removal work and the backfilling of the excavation with clean soils, the location of necessary monitoring wells will be determined. At a minimum, a monitoring well will be installed in the source area near PNM's former dehydrator pit. As mentioned in the action plan of BR's May 28, 1998 letter, a monitoring well will also be installed in the area of BR's original excavation in the southeast corner of the Hampton 4M location. These monitoring wells and other existing monitoring wells will then be periodically tested to show improvement in water quality.

If you require additional details concerning the remediation and monitoring work plan prior to BR initiating source removal work, please let me know. If PNM is unwilling to take action, BR plans to start the remediation work as soon as the necessary equipment is available. Please contact me at (505) 326-9841 if you have questions or additional information is needed.

Sincerely,

Ed Hasely
Sr. Staff Environmental Representative

Attachment: October 26, 1998 letter from William F. Carr

cc: Denny Foust - NMOCD Aztec
Johnny Ellis - BR
Bruce Gantner - BR
John Bemis - BR
Maurene Gannon - PNM Albuquerque
Hampton 4M File

CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
LAWYERS

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WILLIAM F. CARR
BRADFORD C. BERGE
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SANTA FE, NEW MEXICO 87504-2208
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FACSIMILE: (505) 983-6043
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October 26, 1998

VIA FACSIMILE

Richard Alvidrez, Esq.
Keleher & McLeod, P.A.
Post Office Drawer AA
Albuquerque, New Mexico 87103

Re: ***Hampton Well No. 4M***
Unit N, Section 13,
Township 30 North, Range 11 West, NMPM,
San Juan County, New Mexico

Dear Mr Alvidrez:

Recent sampling near the Hampton Well No. 4M confirms that the prior activities of the Public Service Company of New Mexico, and in particular the discharge of hydrocarbons into an unlined pit from its dehydrator, are a continuing active source at this well site. This source is not the result of the activity at this well of Burlington Resources Oil & Gas Company or its predecessors. Until the contamination caused by PNM's discharge of hydrocarbons from its dehydrator is remediated, problems will continue. Furthermore, no effort to clean up this site will be effective until the area surrounding the old PNM unlined dehydrator pit is remediated.

Burlington Resources Oil & Gas Company believes that the delays by PNM in remediation of contamination caused by PNM's discharge of hydrocarbons from its dehydrator can no longer be tolerated and therefore demands that PNM immediately undertake the remediation of the contamination at the Hampton 4M Well. If PNM does not agree to undertake the full remediation of its contamination by 5:00 p.m. on Friday October 30, 1998, Burlington will promptly remediate the contamination resulting from PNM's operation of its dehydrator at the Hampton 4M Well site. Thereafter, Burlington Resources will pursue all remedies available to it for PNM's continued unwillingness to clean up its contamination.

Very truly yours,

WILLIAM F. CARR
Attorney for Burlington Resources Oil & Gas Company
WFC:mlh
cc: Bruce Gantner, Burlington Resources Oil & Gas Company

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

September 1, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-552

Mr. Ed Hasely
Burlington Resources
P.O. Box 4289
Farmington, New Mexico 87499-4289

RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE

Dear Mr. Hasely:

The New Mexico Oil Conservation Division (OCD) has reviewed Burlington Resources (BR) May 28, 1998 letter captioned "HAMPTON 4M - GROUNDWATER CONTAMINATION, UNIT LETTER N, SECTION 13, TOWNSHIP 30N, RANGE 11W" and the ground water investigation and remediation actions related to Public Service Company of New Mexico's (PNM) former dehy pit at the BR Hampton 4M well site near Aztec, New Mexico.

Burlington's investigation and soil remedial actions taken to date are satisfactory. However, a review of the file shows that the investigation of the extent of ground water contamination at the site has not been completed. Since ground water at the site has been contaminated by both PNM's and BR's operations and due to the potential for contamination of downgradient private water wells, the OCD hereby requires that both PNM and BR conduct additional investigations to determine the complete downgradient extent of ground contamination at the Hampton 4M site. The investigations are to be conducted according to PNM and BR's prior approved plans with a report on the investigations to be submitted to the OCD by October 20, 1998. The OCD requests that PNM and BR cooperatively work together on the investigation so that the activities can be conducted in the most efficient and economical manner.

In addition, the OCD hereby requires BR to submit a remediation and monitoring work plan for ground water contaminated as a result of BR's activities. The work plan is to be submitted to the OCD Santa Fe Office by October 30, 1998 and must include methods for removal of free phase products upgradient of PNM's dehy pit.

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

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Maureen Gannon, PNM
J. Burton Everett

Z 274 520 552

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PS Form **3800**, April 1995

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

September 1, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-552

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Burlington Resources
P.O. Box 4289
Farmington, New Mexico 87499-4289

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

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Maureen Gannon, PNM
J. Burton Everett

Z 274 520 552

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PS Form **3800**, April 1995

BURLINGTON RESOURCES

SAN JUAN DIVISION

May 28, 1998

Certified: P 103 693 121

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Hampton 4M - Groundwater Contamination
Unit Letter N, Section 13, Township 30N, Range 11W

Dear Mr. Olson:

As requested in your April 7, 1998 letter, the following is a status report on the soil/groundwater investigation and remediation activities that have been conducted at the Hampton 4M gas production location. This report addresses the activity by Burlington Resources Oil and Gas Company (BR) near our area of operations. Details on earlier investigation work were submitted to you on July 30, 1997 and January 30, 1998, and will not be repeated in this report. A site diagram showing the location of the discussed monitoring wells and soil excavation is included in Attachment #1.

Additional Monitor Well Installation

As required in your April 7 letter, BR installed additional monitor wells near the locations of the former temporary boreholes TPW-1 and TPW-2. On May 11, 1998, Philip Services Corporation drilled and completed both monitor wells (identified as MW-9 and MW-10). The geologic logs and well completion diagrams for these wells are included in Attachment #2.

Monitoring Well Sampling

Since the last report on January 30, 1998, the monitor wells have been sampled twice, first on April 14, 1998 and again on May 12, 1998. The details of the sample results, along with earlier sample results, are shown in Table 1. Due to MW-3 showing "non-detect" for BTEX components over the last five sampling events, it was not sampled during the last sampling event.

Table 1
Groundwater Sampling Summary
BTEX (ppb)

	MW-1	MW-3	MW-4	MW-8	MW-9	MW-10
1/31/97		ND	2651.3			
5/1/97		ND	3477.0			
10/30/97	5.8	ND				
1/12/98	8.8	ND	1362.0	33,801		
4/14/98	2.3	ND	1147.2	0.37 ft		
5/12/98	ND	Not sampled	1024.8	0.29 ft	10.5	1.41 ft

NOTE: The shaded areas indicate the thickness of free phase hydrocarbons.

The well development details and analytical results of the May 12 sampling event are included in Attachment #3. PNM collected the April 14 samples and BR does not have copies of the laboratory reports. In addition to the BTEX components, the water was also analyzed for New Mexico Water Quality Control Commission (WQCC) metals and cations and anions pursuant to your April 7 letter.

PNM had all the monitoring wells surveyed for location and groundwater elevation on January 12, 1998. The direction and magnitude of the hydraulic gradient, using this data, is shown in Attachment #4. The map, which was provided to BR from PNM, also details the analytical results of the sampling events up through April 14, 1998. The most recent monitor wells (MW-9 and MW-10) have not been surveyed for location or elevation yet and are not included on this groundwater contour map.

Ongoing Remediation/Investigation

The excavation created during BR's source removal work in December 1997 remains open to allow air to contact the groundwater. This should continue the improvement of the quality of groundwater. PNM sampled the water from this excavation in February 1998 and total BTEX was 4920 ppb. No further sampling has taken place.

In addition to the source removal work that BR performed in the southeast corner of the location, BR has tested both our well bore and the underground flowline from the well to our separation equipment for mechanical integrity. Both tests showed we have mechanical integrity with no indication of leakage.

Conclusions

The water quality of the upgradient well (MW#1) indicates the likelihood that groundwater contamination is not coming from an off site source. The quality of the water from the monitoring well, located approximately 50 feet south of the location, has been tested four times and is within water quality standards.

The groundwater in MW-3 and the recently installed MW-9 has shown to be below regulatory limits. This indicates that the potential plume is relatively narrow and does not travel to the west. The fact that water was not encountered in TPW-3 indicates that the potential plume does not leave location to the east.

The BTEX level in MW-4, located near BR's excavation, continues to drop. Since the last sample prior to our source removal work, the BTEX level in MW-4 has dropped over 70 percent (from 3477.0 ppb to 1024.8 ppb). The BTEX level dropped a little over 10 percent in less than a month between the last two sampling events. It appears that the source removal in the southeast portion of the location is having a positive impact on groundwater.

Less than five inches of free phase hydrocarbons were detected in MW-8 during the April (4.44") and May (3.48") sampling events. BR anticipates the level of free phase will continue to decrease and the groundwater will clean up over time due to the source removal work.

The recently installed MW-10, located near PNM's operations, had 1.41 feet of free phase hydrocarbons on May 12, 1998. Attachment #5 shows an approximate cross section from MW-4 to PNM's MW-2 (including MW-8 and MW-10). The cross section shows that the elevation of the hydrocarbons in MW-10

is less than the level in PNM's MW-2. The progressively increased thickness of "free product" towards PNM's operations implicates at a minimum either an active source of free phase hydrocarbons or unresolved soil contamination. Depending on the source of this hydrocarbon, it can clearly migrate in a contrary direction to groundwater flow until it reaches a static level. Based upon the close proximity to PNM's equipment and that the free phase hydrocarbons are at a lower elevation, BR feels the contamination present in MW-10 is directly related to the contamination under and around PNM's operations.

Plan of Action

Given the continued improvement shown in MW-4, BR's plans are to continue to leave the source removal excavation open for a period of time while we monitor the contaminant levels in the monitor wells.

As the downward trend of contaminant levels continues to progress in the wells near Burlington's source removal area, the excavation will be backfilled with clean soils. A monitoring well will then be installed in the source area. Water quality from the source well and the other monitor wells will be tested periodically to show improvement in water quality.

The Hampton 4M location continues to require monitoring and potentially further remediation. BR's source removal in the southeast corner of the location should continue to have a positive impact on the situation. If you have questions or additional information is needed, please contact me at (505) 326-9841.

Sincerely,

Ed Hasely
Sr. Staff Environmental Representative

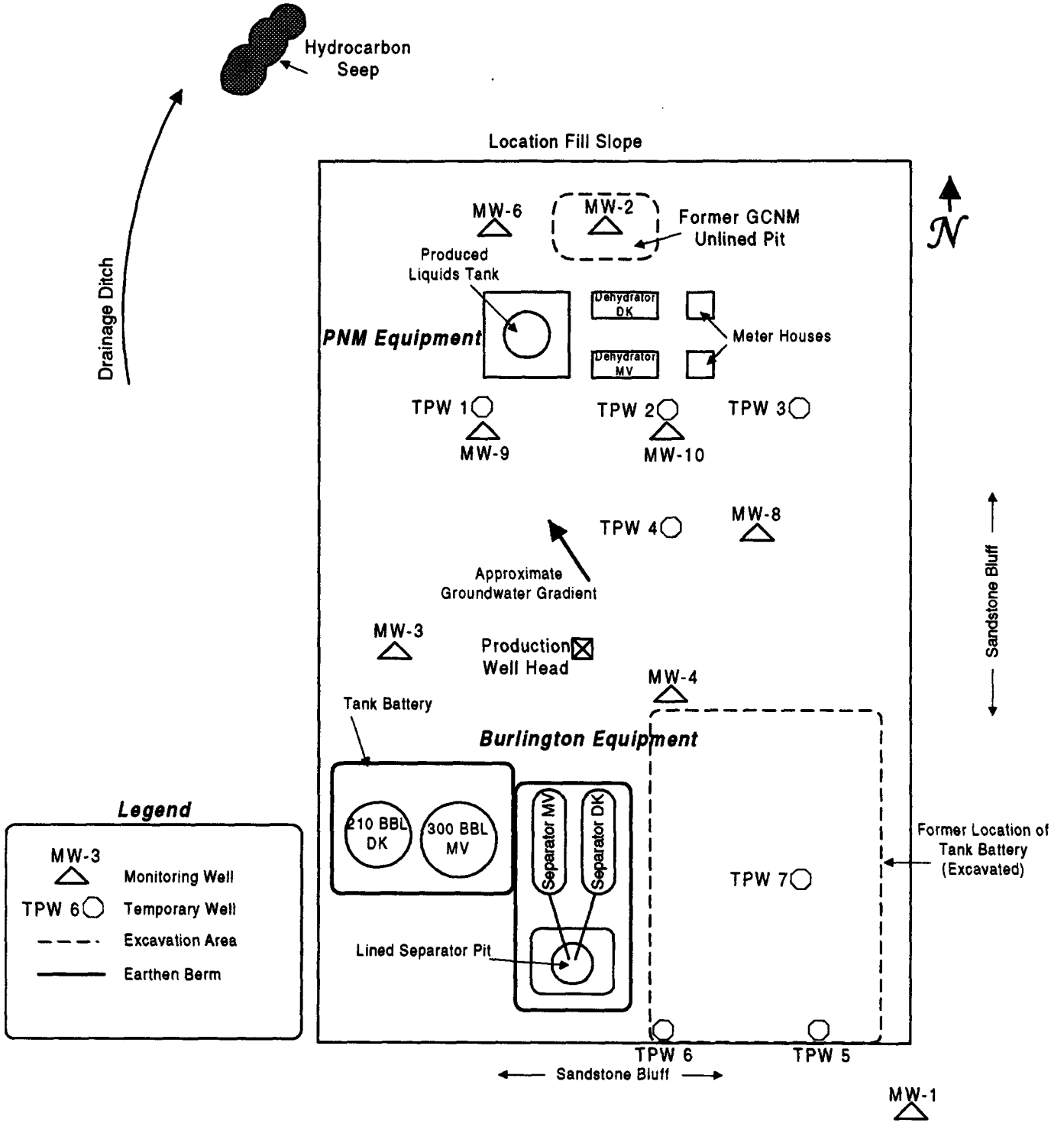
Enclosures: Attachment #1: Hampton 4M Site Diagram
Attachment #2: Geologic Logs and Well Completion Diagrams
Attachment #3: Well Development Laboratory Results
Attachment #4: Groundwater Contour Map
Attachment #5: Cross Section from MW-4 to MW-2

cc: Denny Foust - NMOCD Aztec
Johnny Ellis - BR
Ken Raybon - BR
Bruce Gantner - BR
John Bemis - BR
Denver Bearden - PNM Farmington
Maurene Gannon - PNM Albuquerque
Hampton 4M File

ATTACHMENT #1

SITE DIAGRAM

Hampton 4M Site Diagram



ATTACHMENT #2

GEOLOGIC LOGS
AND
WELL COMPLETION DIAGRAMS

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-1-511
Well # MW9
Page 1 of

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

Project Number 19584 Phase 6000.77
Project Name Burlington Resources Hampton 4M
Project Location Hampton 4M

Elevation
Borehole Location LTR: S: T: R: S. of Production Pit
GWL Depth 22.7' BGS
Drilled By K. PADILLA
Well Logged By C. CHANCE
Date Started 5/11/98
Date Completed 5/11/98

Drilling Method 4 1/4 ID HSA
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: PPM BZ	BH	S/HS	Drilling Conditions & Blow Counts
0										
5	1	5-7	24	Lt Br clayey SAND, f-med sand, tr coarse, loose, dry			0	0	0/0	-0905hr
10	2	10-12	18	Lt Br silty SAND, med-coarse sand, loose, dry			0	0	0/0	-0911
15	3	15-17	18	Br sandy CLAY, mod vf sand, low plastic, stiff, dry			0	0	0/0	-0918hr
20	4	20-	12	Br clayey SAND, vF-F sand, dense, moist			0	0	0/0	-0925hr
25	5	25-	6	Gry weathered SANDSTONE med sand, poorly cemented, trdy moist			0	0	0/0	-0939
30	6	30-32	24	Gry SAND, coarse, well sorted v dense, saturated			0	0	NA	-0952
35				TDB 33.5						
40										

Comments: GW@22.7' @ 0953 hrs. GW@22.7 after setting 10 min. Will set well @ ~ 33' BGS

Geologist Signature Cay Chance

MONITOR WELL INSTALLATION FORM

Borehole # BH1-511
Well # MW9
Page 1 of 1

Philip Services Corp.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name BR HAMPTON 4M
Project Number 19584 Phase 6000
Site Location Hampton 4M

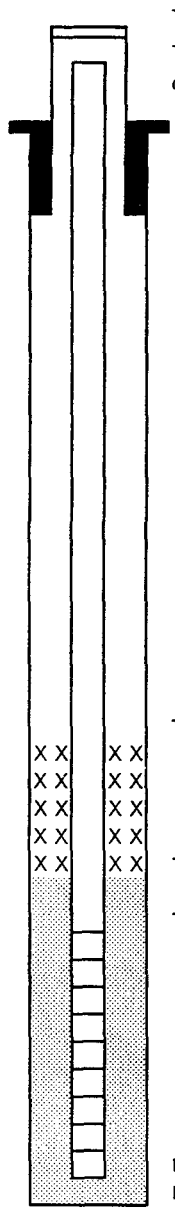
Elevation
Well Location S. of Production Pit
GWL Depth 22.7
Installed By K PADILLA

Date/Time Started 5/11/98
Date/Time Completed 5/11/98

On-Site Geologist C CHANCE
Personnel On-Site
Contractors On-Site
Client Personnel On-Site ED Hasley

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		0
Bottom of Protective Casing		1
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete		0
Bottom of Concrete		1
Top of Grout		1
Bottom of Grout		13
Top of Well Riser		~~.30~~
Bottom of Well Riser		~~018~~ 18
Top of Well Screen		18
Bottom of Well Screen		33
Top of Peltonite Seal		13
Bottom of Peltonite Seal		15
Top of Gravel Pack		15
Bottom of Gravel Pack		33
Top of Natural Cave-In		33
Bottom of Natural Cave-In		33.5
Top of Groundwater		22.7
Total Depth of Borehole		33.5



Top of Protective Casing 0
Top of Riser (survey elev.) -.3
Ground Surface 0
Top of Seal 13
Top of Gravel Pack 15
Top of Screen 18
Bottom of Screen 33
Bottom of Borehole 33.5

Comments Set well @ 33' BGS. Seal hydrated w/ 10 gal potable water. Set as Flush mount w/ locking well cap + padlock

Geologist Signature Cory Chance

MWINSTAL.wk1

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-2511
Well # MW10
Page 1 of

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

Project Number 19584 Phase 6000.77
Project Name Burlington Resources Hampton 4M
Project Location Hampton 4M

Elevation
Borehole Location LTR: S: T: R: S. of Dehy
GWL Depth 24.7'
Drilled By K. PADILLA
Well Logged By C. CHANCE
Date Started 5/11/98
Date Completed 5/11/98

Drilling Method 4 1/4 ID HSA
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: PPM BZ	BH	S/MS	Drilling Conditions & Blow Counts
0										
5	1	5-7	24	Br silty SAND, f-med sand, abnt silt, loose, dry			0	0	0/0	1213 hr
10	2	10-12	12	Br silty SAND, f-med sand, tr coarse, mod silt, dense, dry			0	0	0/0	1218 hr
15	3	15-16	6	Redish Br/Gry SAND, med-coarse, sand, mod silt, tr cementation, dense, dry			0	0	5/33	1228 hr
20	4	20-21	6	Redish br/Gry clayey SAND, F-med sand, dense, dry			0	0	39/43	1235 hr
25	5	25-26	4	Gry SAND, med-coarse, wll sorted, v. dense, saturated			0	220	5/667	1245 hr
	6	26-27	5	Grysilty CLAY, v stiff, non-plastic, dry AA					5/667	Hard drlg 1307 hr
30				TOB 27'						
35										
40										

Comments: GW @ 24.7 after setting 10 min. Will set well @ 27'.

Geologist Signature

MONITOR WELL INSTALLATION FORM

Borehole # BH2-511
Well # MW10
Page 1 of 1

Philip Services Corp.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name BR HAMPTON 4M
Project Number 19584 Phase 6000
Site Location Hampton 4M

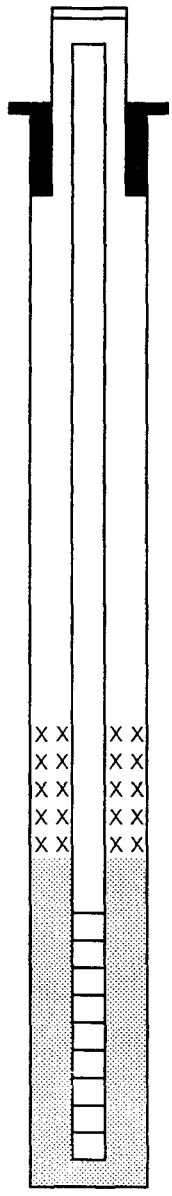
Elevation
Well Location S. of Dehy
GWL Depth 24.7
Installed By K PADILLA

Date/Time Started 5/11/98
Date/Time Completed 5/11/98

On-Site Geologist C CHANCE
Personnel On-Site
Contractors On-Site
Client Personnel On-Site ED Hasley

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		0
Bottom of Protective Casing		1
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete		0
Bottom of Concrete		1
Top of Grout		1
Bottom of Grout		11
Top of Well Riser		.3
Bottom of Well Riser		17
Top of Well Screen		17
Bottom of Well Screen		27
Top of Peltonite Seal		11
Bottom of Peltonite Seal		13.6
Top of Gravel Pack		13.6
Bottom of Gravel Pack		27
Top of Natural Cave-In		27
Bottom of Natural Cave-In		27
Top of Groundwater		24.7
Total Depth of Borehole		27



Top of Protective Casing 0
Top of Riser (survey elev.) .3
Ground Surface 0
Top of Seal 11
Top of Gravel Pack 13.6
Top of Screen 17
Bottom of Screen 27
Bottom of Borehole 27

Comments Well set @ 27' BGS. Seal hydrated w/ 10 gal potable water. Well set w/ flush mount vault, well cap & padlock

Geologist Signature Cory Chance

MWINSTAL.wk1

ATTACHMENT #3

WELL DEVELOPMENT
and
LABORATORY RESULTS

PHILIP ENVIRONMENTAL

WELL OBSERVATION DATA

Serial No. WOD-

Page 1 of 1

Project Name BR Hampton 4M

Project No. 19584

Project Manager R. Thompson

Phase.Task No.

Client Company Burlington Resources

Date 5/12/98

Site Name Hampton 4M

Depth Measurement Instrument Type Keck

Well or Piezometer	Time	Reason Not Measured	Depth to Floating Product (feet)	TOR Depth to Water (feet)	Depth to Sinking Product (feet)	Total well Depth (feet)	Floating Product Thickness (feet)	Sinking Product Thickness (feet)	Comments
MW-1			—	41.98	—	47.69			
MW-4			—	16.67	—	34.29			
MW-8			17.93	18.22	—	NA	.29		
MW-9			—	21.79	—	33.08			
CMC 5/28/98 MW-10			23.09	21.68	—	27.0	1.41		
MW-10			21.68	23.09	—	27.0	1.41		

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To ED Hasely | From Cory Chance

Co./Dept. | Co.

Phone # | Phone #

Fax # 326-9725 | Fax #

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments All depths measured to Top of Riser (TOR)

Signature [signature] Date 5/28/98 Reviewer Date

PHILIP ENVIRONMENTAL

Well Number MW-1

☐ Development ☑ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name BR Hampton 4M Project Manager Thompson Project No. 19584

Client Company Burlington Resources Phase.Task No.

Site Name Site Address

Development Criteria

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

Methods of Development

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

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 47.69'
Initial Depth to Water (feet) 41.98
Height of Water Column in Well (feet) 5.71
Diameter (inches): Well 2' Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing		.93	~~.93~~ 2.79
Gravel Pack			
Drilling Fluids			
Total			2.79

Instruments

Serial No. (If applicable)

☑ pH Meter
☐ DO Monitor
☑ Conductivity Meter
☑ Temperature Meter
☐ Other

Water Disposal

On ground on site

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm) X10	Dissolved Oxygen (mg/L)	Comments
5/12/98	0850		✓				1	1			14.1	6.24	294		Lt Br
	0854						1	2			13.6	6.27	268		sl cleaner
	0859						1	3			13.5	6.29	267		AA

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

Comments

Developer's Signature(s) Cory Chance Date 5/12/98 Reviewer Date

PHILIP ENVIRONMENTAL Water Sampling Data

Location No. MW-1

Serial No. WSD-

Group List Number

Sample Type: ☑ Groundwater ☐ Surface Water ☐ Other Date 5/12/98

Project Name BR Hampton 4M Project No. 19584

Project Manager R. Thompson Phase.Task No.

Site Name Hampton 4M

Sampling Specifications

Requested Sampling Depth Interval (feet) Top 3'

Requested Wait Following Development/Purging (hours) NA

Initial Measurements

Time Elapsed From Final Development/Purging (hours) NA

Initial Water Depth (feet) 41.98

Nonaqueous Liquids Present (Describe) NA

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

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

Sample Containers

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

Preservatives: H = HCl; N = HNO_3; S = H_2SO_4; A = NaOH; O = Other (Specify); – = None

Analytical Parameter List	Container: Number	Type	Volume (mL)	Field Filtered: Yes	No	Preserved	Cooled During Collection: Yes	No	Comments
BTEX	2	V	40		✓	–	✓		
Metals	1	P	250		✓	HNO_3	✓		
Cation/Anion	1	P	1000		✓	–	✓		

Filter Type Chain-of-Custody Form Number C3192

Comments

Signature Date 5/12/98 Reviewer Date

Form A0202 Rev. 02/24/94

FARMINGTON LABORATORY
807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Water Analysis

Burlington Resources, Inc.

Sample ID:	MW - 1	Date Reported:	05/20/98
Matrix:	Water	Date Sampled:	05/12/98
Lab ID:	9805054-01	Date Received:	05/12/98

Parameter	Analytical Result	Units
General		
pH	4.78	s.u.
Conductivity	2,790	µmohs/cm
Specific Gravity	1.005	
TDS (calc)	3,100	mg/L
TDS (Measured)	3,330	mg/L
Cations		
Hardness	2,100	mg/L
Calcium	600	mg/L
Magnesium	147	mg/L
Sodium	113	mg/L
Potassium	7.0	mg/L
Anions		
Alkalinity	12.5	mg/L
Carbonate	1.0	mg/L
Bicarbonate	11.5	mg/L
Hydroxide	<1.0	mg/L
Chloride	47.5	mg/L
Sulfate	2,180	mg/L
Data Validation		**Acceptable Limits**
% Difference cations/anions meq/l	0.20	+/- 2 - 5 %
TDS Ratio	1.1	1.0 - 1.2

Danisa Carman, Lab Manager

FARMINGTON LABORATORY
807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Certificate of Analysis No. 9805054-01

Philip Environmental
4000 Monroe Rd
Farmington, NM 87401
Attn: Robert Thompson

Date: 05/20/98

Project:	BR Hampton 4M	Project No:	19584
Site:	Farmington	Matrix:	Water
Sampled By:	C. Chance	Date Sampled:	05/12/98
Sample ID:	MW - 1	Date Received:	05/12/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene	ND	1.0	µg/L
Toluene	ND	1.0	µg/L
Ethylbenzene	ND	1.0	µg/L
Total Xylene	ND	1.0	µg/L
Total Volatile Aromatic Hydrocarbons	ND		µg/L

Surrogate	% Recovery
1,4,Difluorobenzene	107
4-Bromofluorobenzene	97

Method 8020A***
Analyzed by: VHZ
Date: 05/14/98

ND-Not Detected

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

Danica Carman, Lab Director

FARMINGTON LABORATORY
807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Certificate of Analysis No. 9805054-01

Philip Environmental
4000 Monroe Rd.
Farmington, NM 87401
Attn: Robert Thompson

Date: 05/20/98

Project:	BR Hampton 4M	Project No:	19584
Site:	Farmington	Matrix:	Water
Sampled By:	C. Chance	Date Sampled:	05/12/98
Sample ID:	MW - 1	Date Received:	05/12/98

Analytical Data

PARAMETER	RESULTS	Detection Limit	UNITS
Dissolved Metals			
Arsenic	ND	0.1	mg/L
Barium	0.006	0.005	mg/L
Cadmium	ND	0.005	mg/L
Chromium	ND	0.01	mg/L
Copper	ND	0.01	mg/L
Iron	4.50	0.02	mg/L
Lead	ND	0.05	mg/L
Manganese	3.12	0.005	mg/L
Selenium	ND	0.1	mg/L
Silver	ND	0.01	mg/L
Method 6010B ***			
Analyzed by: JM			
Date: 5/19/98			
Mercury	ND	0.0002	mg/L
Method 7470A ***			
Analyzed by: AG			
Date: 5/15/98			

ND-Not Detected

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Daniel Carman, Lab Manager

PHILIP ENVIRONMENTAL

Well Number MW-4

☐ Development ☑ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of 1

Project Name BR Hampton 4M | Project Manager R. Thompson | Project No. 19584

Client Company Burlington Resources | Phase.Task No.

Site Name Hampton 4M | Site Address

Development Criteria

☑ (3) to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Methods of Development

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

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 34.29
Initial Depth to Water (feet) 16.67
Height of Water Column in Well (feet) 17.62
Diameter (inches): Well 2 Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing		2.8	8.6
Gravel Pack			
Drilling Fluids			
Total			8.6

Instruments

	Serial No. (If applicable)
☑ pH Meter	Oyster
☐ DO Monitor	
☑ Conductivity Meter	
☑ Temperature Meter	
☐ Other	

Water Disposal On site

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm) x10	Dissolved Oxygen (mg/L)	Comments
5/12/98	0936						2.5	2.5			13.8	6.20	242		Black, sl silty
	0944						2.5	5.0			13.9	6.55	250		AA
	0951						2.5	7.0			13.9	6.67	268		AA
	0958						2.0	9.0			14.0	6.75	298		AA less silt

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

Comments

Developer's Signature(s) Tony Chavez Date 5/12/98 Reviewer Date

PHILIP ENVIRONMENTAL Water Sampling Data

Location No. MW-4

Serial No. WSO-

Group List Number

Sample Type: ☑ Groundwater ☐ Surface Water ☐ Other Date 5/12/98

Project Name BR Hampton 4M Project No. 19584

Project Manager R. Thompson Phase.Task No.

Site Name Hampton 4M

Sampling Specifications

Requested Sampling Depth Interval (feet) ~~NA~~ Top 3'

Requested Wait Following Development/Purging (hours) NA

Initial Measurements

Time Elapsed From Final Development/Purging (hours)

Initial Water Depth (feet) 16.67

Nonaqueous Liquids Present (Describe) NA

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

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

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

Sample Containers

Preservatives: H = HCl; N = HNO_3; S = H_2SO_4; A = NaOH; O = Other (Specify); — = None

Analytical Parameter List	Container: Number	Type	Volume (mL)	Field Filtered: Yes	No	Preserved	Cooled During Collection: Yes	No	Comments
BTEX	2	V	40		✓	—	✓		
Metals	1	P	250		✓	HNO3	✓		
Anion/Cations	1	P	1000		✓	—	✓		

Filter Type Chain-of-Custody Form Number C-3192

Comments

Signature Date 5/12/98 Reviewer Date

Form A0202 Rev. 02/24/94

FARMINGTON LABORATORY
807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Water Analysis

Burlington Resources, Inc.

Sample ID:	MW - 4	Date Reported:	05/20/98
Matrix:	Water	Date Sampled:	05/12/98
Lab ID:	9805054-02	Date Received:	05/12/98

Parameter		Analytical Result	Units
General			
	pH	7.07	s.u.
	Conductivity	3,280	µmohs/cm
	Specific Gravity	1.006	
	TDS (calc)	3,480	mg/L
	TDS (Measured)	3,950	mg/L
Cations			
	Hardness	2,300	mg/L
	Calcium	620	mg/L
	Magnesium	183	mg/L
	Sodium	179	mg/L
	Potassium	5.0	mg/L
Anions			
	Alkalinity	183	mg/L
	Carbonate	15.7	mg/L
	Bicarbonate	167	mg/L
	Hydroxide	<1.0	mg/L
	Chloride	45.0	mg/L
	Sulfate	2,340	mg/L
Data Validation			**Acceptable Limits**
	% Difference cations/anions meq/l	0.20	+/- 2 - 5 %
	TDS Ratio	1.1	1.0 - 1.2

Danica Carman, Lab Manager

FARMINGTON LABORATORY
807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Certificate of Analysis No. 9805054-02

Philip Environmental
4000 Monroe Rd
Farmington, NM 87401
Attn: Robert Thompson

Date: 05/20/98

Project:	BR Hampton 4M	Project No:	19584
Site:	Farmington	Matrix:	Water
Sampled By:	C. Chance	Date Sampled:	05/12/98
Sample ID:	MW - 4	Date Received:	05/12/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene	1000	10.0	µg/L
Toluene	1.8	1.0	µg/L
Ethylbenzene	20	1.0	µg/L
Total Xylene	3.0	1.0	µg/L
Total Volatile Aromatic Hydrocarbons	1024.8		µg/L

Surrogate	% Recovery
1,4,Difluorobenzene	107
4-Bromofluorobenzene	93

Method 8020A***
Analyzed by: VHZ
Date: 05/15/98

ND-Not Detected

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

Danica Carman, Lab Director

FARMINGTON LABORATORY
807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Certificate of Analysis No. 9805054-02

Philip Environmental
4000 Monroe Rd.
Farmington, NM 87401
Attn: Robert Thompson

Date: 05/20/98

Project:	BR Hampton 4M	Project No:	19584
Site:	Farmington	Matrix:	Water
Sampled By:	C. Chance	Date Sampled:	05/12/98
Sample ID:	MW - 4	Date Received:	05/12/98

Analytical Data

PARAMETER	RESULTS	Detection Limit		UNITS
Dissolved Metals				
Arsenic	ND	0.1	-	mg/L
Barium	0.009	0.005		mg/L
Cadmium	ND	0.005		mg/L
Chromium	ND	0.01		mg/L
Copper	ND	0.01		mg/L
Iron	4.87	0.02		mg/L
Lead	ND	0.05		mg/L
Manganese	5.80	0.005		mg/L
Selenium	ND	0.1		mg/L
Silver	ND	0.01		mg/L
Method 6010B ***				
Analyzed by: JM				
Date: 5/19/98				
Mercury	0.0002	0.0002		mg/L
Method 7470A ***				
Analyzed by: AG				
Date: 5/15/98				

ND-Not Detected

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Danica Carman, Lab Manager

PHILIP ENVIRONMENTAL

Well Number MW-9 ☑ Development ☐ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of 1

Project Name BR Hampton 4M Project Manager R Thompson Project No. 19584

Client Company Burlington Resources Phase.Task No.

Site Name Hampton 4M Site Address

Development Criteria

☑ 3 to (5) Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Methods of Development

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

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 33.08
Initial Depth to Water (feet) 21.79
Height of Water Column in Well (feet) 11.29
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing		1.8	~~5.5~~ 9
Gravel Pack			
Drilling Fluids			
Total			~~5.5~~ 9

Instruments

Serial No. (If applicable)

☑ pH Meter
☐ DO Monitor
☑ Conductivity Meter
☑ Temperature Meter
☐ Other

Water Disposal

On Site

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm) x10	Dissolved Oxygen (mg/L)	Comments
5/12/98	1034						2.5	2.5			15.1	6.67	260		1x Br
	1041						2.5	5.0			15.5	6.65	262		AA
	1050						2.5	7.5			15.2	6.67	269		AA
	1059						2.5	10.0			16.5	6.70	260		AA

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

Comments

Developer's Signature(s) Date 5/12/98 Reviewer Date

Water Sampling Data

PHILIP ENVIRONMENTAL

Location No. MW-9

Serial No. WSO-

Group List Number

Sample Type: ☑ Groundwater ☐ Surface Water ☐ Other Date 5/12/98

Project Name BR Hampton 4M Project No. 19584

Project Manager R. Thompson Phase.Task No.

Site Name Hampton 4M

Sampling Specifications

Requested Sampling Depth Interval (feet) ~~NA~~ Top 3'

Requested Wait Following Development/Purging (hours) NA

Initial Measurements

Time Elapsed From Final Development/Purging (hours)

Initial Water Depth (feet) 21.79

Nonaqueous Liquids Present (Describe) NA

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings: Temp. (°C)	pH	DO (mg/L)	Cond. (umhos/cm)	Water Collection Data: Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Bail	Final Water Depth (feet)	Notes – (Explain in Comments Below)
			SEE	Develop	&	Purge						
						FORM						

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

Preservatives: H = HCl; N = HNO_3; S = H_2SO_4; A = NaOH; O = Other (Specify); – = None

Sample Containers

Analytical Parameter List	Container: Number	Type	Volume (mL)	Field Filtered: Yes	No	Preserved	Cooled During Collection: Yes	No	Comments
BTEX	2	V	40		✓	–	✓		
Metals	1	P	250		✓	HNO3	✓		
Anion/Cations	1	P	1000		✓	–	✓		

Filter Type Chain-of-Custody Form Number C-3192

Comments

Signature Greg Chase Date 5/12/98 Reviewer Date

Form A0202 Rev. 02/24/94

FARMINGTON LABORATORY
807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Water Analysis

Burlington Resources, Inc.

Sample ID:	MW - 9	Date Reported:	05/20/98
Matrix:	Water	Date Sampled:	05/12/98
Lab ID:	9805054-03	Date Received:	05/12/98

Parameter	Analytical Result	Units
General		
pH	6.14	s.u.
Conductivity	3,530	µmohs/cm
Specific Gravity	1.006	
TDS (calc)	3,710	mg/L
TDS (Measured)	4,080	mg/L
Cations		
Hardness	2,450	mg/L
Calcium	560	mg/L
Magnesium	256	mg/L
Sodium	166	mg/L
Potassium	9.0	mg/L
Anions		
Alkalinity	92.5	mg/L
Carbonate	19.4	mg/L
Bicarbonate	73.1	mg/L
Hydroxide	<1.0	mg/L
Chloride	272	mg/L
Sulfate	2,390	mg/L
Data Validation		**Acceptable Limits**
% Difference cations/anions meq/l	2.52	+/- 2 - 5 %
TDS Ratio	1.1	1.0 - 1.2

Danica Carman, Lab Manager

FARMINGTON LABORATORY
807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Certificate of Analysis No. 9805054-03

Philip Environmental
4000 Monroe Rd
Farmington, NM 87401
Attn: Robert Thompson

Date: 05/20/98

Project:	BR Hampton 4M	Project No:	19584
Site:	Farmington	Matrix:	Water
Sampled By:	C. Chance	Date Sampled:	05/12/98
Sample ID:	MW - 9	Date Received:	05/12/98

Analytical Data

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene	6.7	1.0	µg/L
Toluene	1.1	1.0	µg/L
Ethylbenzene	ND	1.0	µg/L
Total Xylene	2.7	1.0	µg/L
Total Volatile Aromatic Hydrocarbons	10.5		µg/L

Surrogate	% Recovery
1,4,Difluorobenzene	100
4-Bromofluorobenzene	93

Method 8020A***
Analyzed by: VHZ
Date: 05/15/98

ND-Not Detected

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th Ed
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

Danica Carman, Lab Director

FARMINGTON LABORATORY
807 S. CARLTON
FARMINGTON, NM 87499-1289
(505) 326-2588

Certificate of Analysis No. 9805054-03

Philip Environmental
4000 Monroe Rd.
Farmington, NM 87401
Attn: Robert Thompson

Date: 05/20/98

Project:	BR Hampton 4M	Project No:	19584
Site:	Farmington	Matrix:	Water
Sampled By:	C. Chance	Date Sampled:	05/12/98
Sample ID:	MW - 9	Date Received:	05/12/98

Analytical Data

PARAMETER	RESULTS	Detection Limit	UNITS
Dissolved Metals			
Arsenic	ND	0.1	mg/L
Barium	0.024	0.005	mg/L
Cadmium	ND	0.005	mg/L
Chromium	ND	0.01	mg/L
Copper	ND	0.01	mg/L
Iron	6.38	0.02	mg/L
Lead	ND	0.05	mg/L
Manganese	9.90	0.005	mg/L
Selenium	ND	0.1	mg/L
Silver	ND	0.01	mg/L
Method 6010B ***			
Analyzed by: JM			
Date: 5/19/98			
Mercury	0.0002	0.0002	mg/L
Method 7470A ***			
Analyzed by: AG			
Date: 5/15/98			

ND-Not Detected

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Danica Carman, Lab Manager

9805054

Chain of Custody Record

PHILIP
ENVIRONMENTAL SERVICES
4000 Monroe Road
Farmington, NM 87401
(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 3192

Project Name: BR Hampton 4M
Project Number: 19584 Phase . Task: 6000 .771
Samplers: CM Chance
Laboratory Name: SPL
Laboratory Location: Farmington

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	BTEX 8020	WQCC Metals	Cations/Anions	Comments
MW-1	5/12/98	0910	Water	4	✓	✓	✓	
MW-4	↓	1010	↓	4	✓	✓	✓	
MW-9	↓	1110	↓	4	✓	✓	✓	

Type of Analysis and Bottle

Chc 5/12/98

Relinquished by:

Signature	Date	Time
Cory Chance	5/12/98	

Received By:

Signature	Date	Time
Tamara Cyrman	5/12	1:50

Samples Iced: ☑ Yes ☐ No

Preservatives (ONLY for Water Samples)

- ☐ Cyanide ..... Sodium hyroxide (NaOH)
- ☐ Volatile Organic Analysis ..... Hydrochloric acid (HCl)
- ☐ Metals ..... Nitric acid (HNO_3)
- ☐ TPH (418.1) ..... Sulfuric acid (H_2SO_4)
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Carrier: Hand Delivered
Airbill No.

Shipping and Lab Notes: Invoice: ED Hasley
Burlington Resources
PO Box 4289
Farmington NM 87499

Send results to Robert Thompson at above address

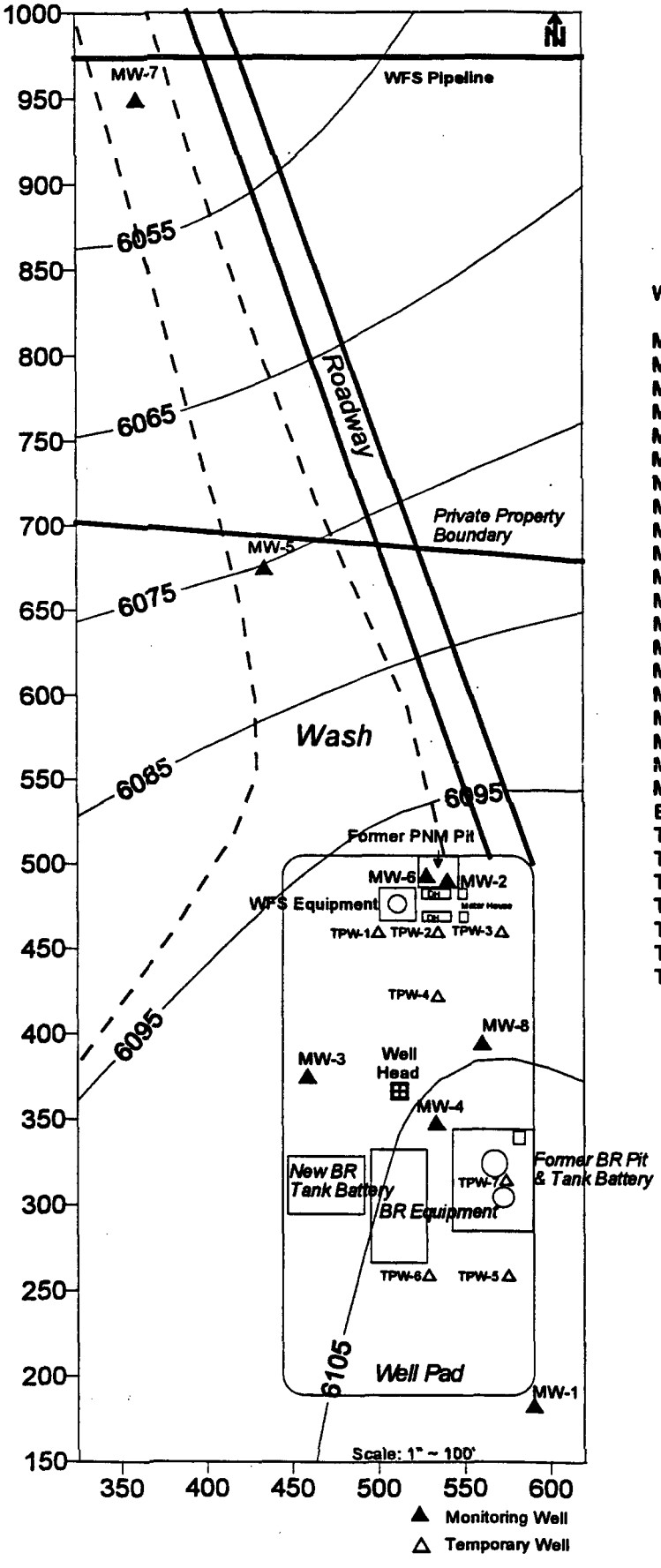
PE-176 4/95

ATTACHMENT #4

GROUNDWATER CONTOUR MAP

Hampton 4M Site Map and Analytical Results (Co. Centrations in ppb)
Groundwater Contour Map (January, 1998)

EB - Private Well
(Not to Scale)



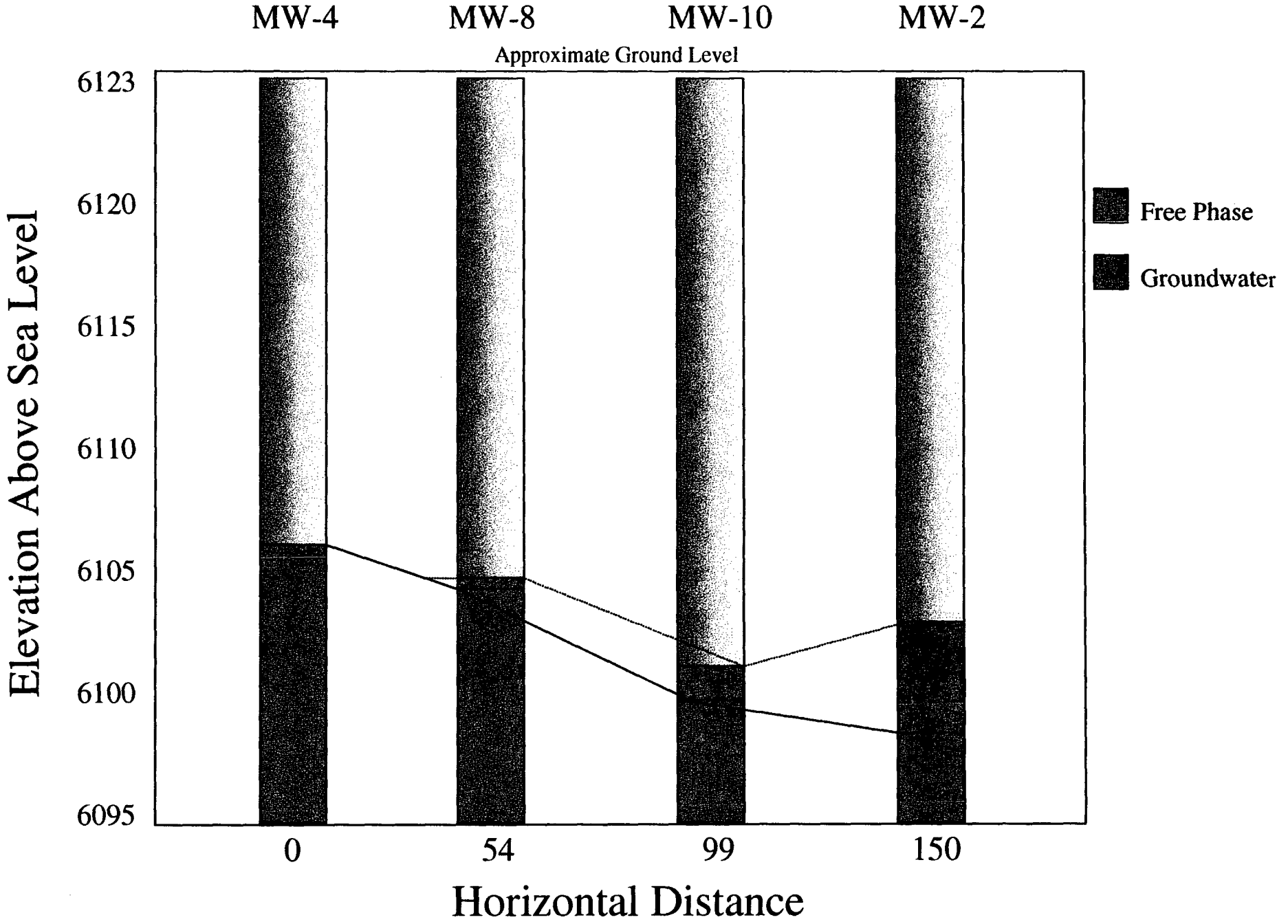
Well #	Date	B	T	E	X
MW-1	10/30/97	2.4	2.3	<0.2	1.1
MW-1	1/12/98	4.3	3.3	0.2	1
MW-1	4/14/98	1	1.3	<0.5	<1.5
MW-2	1/12/98	4.41 feet of product			
MW-2	4/14/98	2.59 feet of product			
MW-3	1/31/97	<0.2	<0.2	<0.2	<0.2
MW-3	1/12/98	<0.2	<0.2	<0.2	<0.2
MW-3	4/14/98	<0.5	<0.5	<0.5	<1.5
MW-4	1/31/97	811.7	1420.5	31.0	388.1
MW-4	1/12/98	1251	6	81	24
MW-4	4/14/98	1100	7.2	28	12
MW-5	10/29/97	5934	10024	709	8188
MW-5	1/12/98	7521	11213	779	8436
MW-5	4/14/98	7000	11000	720	7800
MW-6	1/12/98	4.71 feet of product			
MW-6	4/14/98	Product Recovery (pump in well)			
MW-7	1/12/98	780	246	258	3942
MW-7	4/14/98	820	340	190	2450
MW-8	1/12/98	5410	17301	693	9397
MW-8	4/14/98	0.37 feet of product			
EB-Well	11/25/97	<0.2	<0.2	<0.2	<0.2
TPW-1	6/5/97	20	<1.0	<1.0	<1.0
TPW-2	6/9/97	2.48 feet of product			
TPW-3	6/5/97	No Groundwater Water			
TPW-4	6/6/97	2000	57	3100	810
TPW-5	6/6/97	5800	460	16000	7000
TPW-6	6/6/97	1600	48	3400	690
TPW-7	6/6/97	5300	620	18000	9300

Ham210map.srf rev4/19/98

ATTACHMENT #5

CROSS SECTION FROM MW-4 TO MW-2

CROSS SECTION FROM MW-4 TO MW-2



BURLINGTON RESOURCES

SAN JUAN DIVISION

April 29, 1998

Certified: P 103 693 193

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Hampton 4M - Groundwater Contamination
Unit Letter N, Section 13, Township 30N, Range 11W

Dear Mr. Olson

This letter is to confirm our recent conversation that the deadline for Burlington Resources' report on the subject project has been postponed from May 8, 1998 to May 29, 1998. This will allow us adequate time to install the required monitor wells, do a round of sampling from all monitor wells, and prepare a report on the remediation and investigation actions.

If you have questions or additional information is needed, please contact me at (505) 326-9841.

Sincerely,

Ed Hasely
Sr. Staff Environmental Representative

cc: Denny Foust - NMOCD Aztec
Johnny Ellis - BR
Bruce Gantner - BR
Hampton 4M File

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

April 7, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-235-437-253

Mr. Ed Hasely
Burlington Resources
P.O. 4289
Farmington, New Mexico 87499-4289

RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE

Dear Ms. Gannon:

The New Mexico Oil Conservation Division (OCD) has reviewed Burlington Resources (BR) January 30, 1998 "HAMPTON 4M - GROUNDWATER CONTAMINATION, UNIT LETTER N, SECTION 13, TOWNSHIP 30N, RANGE 11W". This document contains the results of BR's recent investigation and remedial actions at the Hampton 4M well site near Aztec, New Mexico. The document also recommends an action plan for remediation and monitoring of contaminated ground water related to BR's operations.

The investigation and remedial actions taken to date are satisfactory, however, the OCD notes that BR did not analyze ground water samples from the monitor wells for New Mexico Water Quality Control Commission (WQCC) metals and cations and anions pursuant to the OCD's November 124, 1997 work plan approval conditions.

The remedial action plan as contained in the above referenced document is approved with the following conditions:

1. BR will install 2 additional monitor wells at the locations of former temporary boreholes TPW-1 and TPW-2 for the purposes of monitoring the downgradient limits of BR's ground water plume. The monitor wells will be installed and constructed in accordance with the procedures outlined in BR's September 19, 1997 prior work plan.

2. BR will sample and analyze ground water from all of the monitor wells for concentrations of benzene, toluene, ethylbenzene, xylene (BTEX), WQCC metals and cations and anions using EPA approved methods and quality assurance/quality control procedures.

3. BR will submit a report on the remediation and investigation actions to the OCD by May 8, 1998. The report will contain:

   a. A description of all activities conducted including conclusions and recommendations.

   b. A water table elevation map showing all monitor well locations and relevant site features and the direction and magnitude of the hydraulic gradient.

   c. Geologic logs and well completion diagrams for each monitor well.

   d. The laboratory analytical results of all soil and water quality sampling including the quality assurance/quality control data.

   e. The disposition of all wastes generated.

   f. A long term ground water monitoring plan.

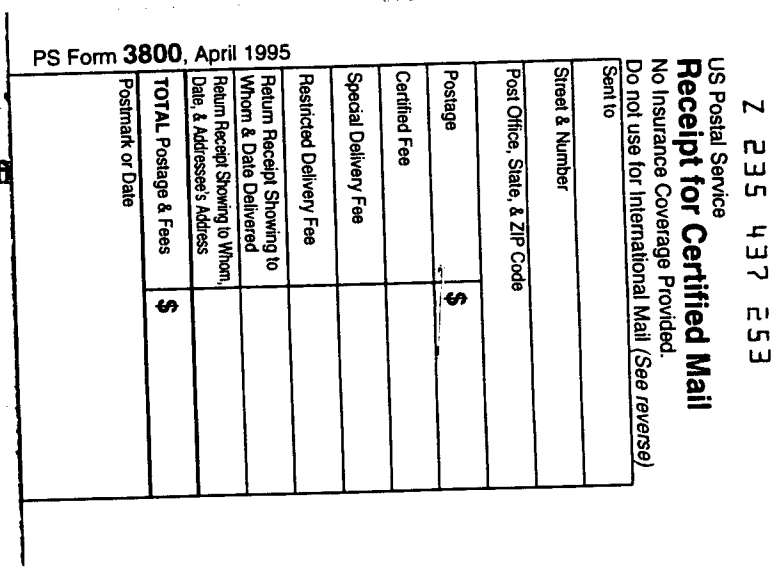
Pleased be advised that OCD approval does not relieve BR of liability if BR fails to adequately remediate or define the extent of contamination related to BR's activities. In addition, OCD approval does not relieve BR of responsibility for compliance with any other federal, state, local or tribal laws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

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

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Of
Maureen Gannon, PNM
J. Burton Everett



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 13, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-235-437-244

Ms. Maureen Gannon
PNM
Alvarado Square, MS 0408
Albuquerque, New Mexico 87158

RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE

Dear Ms. Gannon:

The New Mexico Oil Conservation Division (OCD) has been reviewing the investigation and remedial actions related to PNM's former dehy pit at Burlington Resources Hampton 4M well site near Aztec, New Mexico.

The investigation and remedial actions taken to date are satisfactory. However, the OCD is concerned about the migration of contaminated ground water onto downgradient private lands and the presence of private water wells downgradient of the site. Therefore, the OCD requires that PNM take additional remedial actions within 30 days to remove the remaining source areas with free phase hydrocarbons in the vicinity of and immediately downgradient of the dehy pit.

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

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District O
Ed Hasely, Burlington, Resources
J. Burton Everett

PS Form **3800**, April 1995

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STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 11, 1998

Mr. J. Burton Everett
Everett Investment
P.O. Box 476
Aztec, New Mexico 87410

RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE

Dear Mr. Everett:

The New Mexico Oil Conservation Division (OCD) has reviewed your February 23, 1998 correspondence notifying the OCD that contaminated ground water has migrated onto your property from Burlington Resources Hampton 4M well site near Aztec, New Mexico.

The OCD has been working with the Public Service Company of New Mexico (PNM) and Burlington Resources to remediate contaminated soils and ground water at the site. Because you are directly impacted by the contamination the OCD will copy you on all correspondence related to the site. If you are interested in reviewing the actions taken to date, all of the information related to the remedial actions are on file at the OCD Aztec Office.

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

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Maureen Gannon, PNM
Ed Hasely, Burlington, Resources

BH 0150

BURLINGTON RESOURCES

SAN JUAN DIVISION

March 4, 1998

J. Burton Everett
P.O. Box 476
Aztec, New Mexico 87410

RE: Hampton 4M Gas Well
Unit Letter N, Section 13, Township 30N, Range 11W

Dear Mr. Everett:

In response to your letter dated February 23, 1998, I am not aware of the test results referenced in your letter and would appreciate it if you would provide me with a copy of the test results that Mr. Bearden brought to your attention. P.N.M. sampled your water well and indicated to me that the laboratory results showed the water met drinking water standards.

Burlington Resources has been and is currently working with P.N.M. and the New Mexico Oil Conservation Division concerning the necessary cleanup of the Hampton 4M location. As part of the cleanup effort, Burlington excavated and removed approximately 1000 cubic yards of soil from the location in December, 1997. We will continue to cooperate with companies and agencies to properly address any problems.

If you have questions or additional information is needed, please contact me at (505) 326-9841.

Sincerely,

Ed Hasely
Sr. Staff Environmental Representative

Cc: Maureen Gannon – PNM
Denny Foust – NMOCD

3535 East 30th St., 87402-8801, P.O. Box 4289, Farmington, New Mexico 87499-4289, Telephone 505-326-9700, Fax 505-326-9833

To Bill Olson

February 23, 1998
PO Box 476
Aztec, New Mexico 87410

To Whom It May Concern:

Re: Hydrocarbon pollutants affecting private property

Location: Downstream (north) from Hampton 4 M gas well in
San Juan County, New Mexico
South of State Rd. #173 approximately 2 miles east of
Aztec.

Mr. Denver Bearden brought me test results that show a serious problem exists as to various hydrocarbon components that are very high. The problem has existed for several years and warrants immediate attention.

Please cooperate with any and all agencies, companies and personnel necessary to effect necessary results.

Your very truly,

J. Burton Everett General Partner
Everett Investment
A New Mexico limited partnership

cc: Mr. Ed Hasely
c/o Burlington Resources

Diana Luck
c/o P.N.M.

Denny Foust
New Mexico Oil Conservation div.

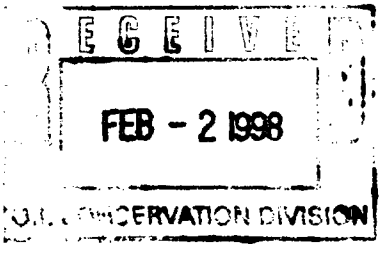
BURLINGTON RESOURCES

SAN JUAN DIVISION

January 30, 1998

Certified: P 103 693 179

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 85704



RE: Hampton 4M - Groundwater Contamination
Unit Letter N, Section 13, Township 30N, Range 11W

Dear Mr. Olson

As requested in your November 24, 1997 letter, the following is a status report on the soil/groundwater investigation and remediation activities that have been conducted at the Hampton 4M gas production location. This report addresses the activity up gradient of PNM's former dehydrator pit as detailed in Burlington Resources' Soil and Groundwater Investigation Work Plan dated September 19, 1997. Details on the initial investigation work were submitted to you on July 30, 1997 and will not be repeated in this report. A site diagram showing the location of the discussed monitoring wells and soil excavation is included in Attachment #1.

Up Gradient Monitoring Well Information

Archaeological clearance and landowner approval was obtained on October 17, 1997 to drill a monitoring well off the existing well pad. On October 29, 1997, Philip Services Corporation drilled and completed an up gradient monitoring well located approximately 50 feet south of the southeast corner of the production location. The geologic logs and well completion diagram for this well (MW #1) are included in Attachment #2. Analytical results of a water sample collected on October 30, 1997 and again on January 12, 1998 showed the water to be clean (below regulatory limits). The laboratory results are included in Attachment #3.

On Site Source Investigation/Remediation

As discussed in the Work Plan, the source investigation work in the southeast corner of location required the use of a D-8 dozer due to the hard layers of sandstone. On December 3, 1997, the dozer began by ripping and pushing non-impacted soil to the south side of location. After approximately four feet of clean soil had been removed to the south, a small area of impacted soils was uncovered in the former location of the produced hydrocarbon storage tanks. A screen of this soil with a PID registered a reading of 900 parts per million (ppm). At that time, the dozer began ripping and pushing the soil to the north side of the excavation.

Due to the fact that a dozer was being used to excavate the contaminated soils, non-impacted soils could not easily be segregated from the contaminated soils. The dozer, unlike a backhoe, could not pick and choose the soils to be stockpiled. For this reason, soils stockpiled to the north of the excavation included a large percentage of clean soil mixed with a smaller percentage of contaminated soils. The entire stockpile was treated as contaminated soil.

Excavation work continued on December 4, 1997. At approximately the 14-foot level, all four walls and the bottom of the excavation were sampled for heated headspace PID readings. All except the west wall had readings greater than the NMOCD's pit closure guideline of 100 ppm. The excavation work resumed and at approximately the 15-foot level, samples were again collected. The readings at this depth were all less than 100 ppm and a composite showed a reading of 44 ppm on the PID. The PID readings for both depths are detailed in Table 1.

Table 1
Hampton 4M Excavation
Heated Headspace PID Readings (ppm)

Depth (ft)	South Wall	West Wall	North Wall	East Wall	Bottom
14	526	51.0	273	388	195
15	5.4	51.0	49.0	15.0	38.0

At this time, the dozer work was discontinued. The final excavation was approximately 60 feet long, 30 feet wide and 15 feet deep. Due to the need for the dozer to ramp into the excavation, additional dirt had to be moved. Again, this additional dirt could not be segregated from the impacted soil and was treated as contaminated.

Soil samples were collected from the excavation for laboratory analysis on December 4, 1997. The samples were sent to Onsite Laboratory and analyzed for Benzene, Toluene, Ethlybenzene and Total Xylenes (BTEX) by USEPA Method 8020 and Total Petroleum Hydrocarbons (TPH) by USEPA Method 8015 modified for gasoline and diesel range hydrocarbons. The results were all less than NMOCD cleanup standards for soils and are included in Attachment #3.

After the excavation was left open for a few hours, groundwater seeped into the excavation. No free phase hydrocarbons were observed. Over the next week, approximately 100 barrels of water were removed from the excavation and properly disposed. Thirty barrels were removed on December 5 and seventy barrels were removed on December 11, 1997. Due to the soil disturbance from the dozer work, it was felt a water sample would not be representative of actual groundwater. For this reason, no samples of the water were collected from the excavation.

Waste Disposal

The impacted soils that were stockpiled to the north of the excavation were transported to nearby Burlington Resources locations and landfarmed. Impacted soils, totaling approximately 1000 cubic yards, were trucked to the Nye SRC #14, Nye SRC #4 and Hampton #5 well site locations . These landfarms will be periodically disked to promote natural bio-degradation until TPH and BTEX levels are less than NMOCD cleanup standards.

The water that was removed from the excavation was disposed in Burlington Resources' McGrath SWD located in Section 34 – T30N – R12W, San Juan County, New Mexico.

Additional Monitoring Wells

As requested in your November 24, 1997 letter, an additional monitoring well was installed midway between MW-4 and TPW-3. The new well, identified as MW-8, was drilled and completed on December 11, 1997 by Philip Services Corporation. The geologic logs and well completion diagrams are included in Attachment #2. Analytical results of a water sample collected on January 12, 1998 showed the water was high in dissolved BTEX components (total BTEX of 33,801 ppb). The laboratory results are included in Attachment #3.

The excavation has been left open to promote remediation; therefore, the required source monitoring well has not yet been installed. Once the excavation is backfilled, the monitoring well will be installed in the source area near the former location of temporary monitor well TPW-7.

Existing Monitoring Well Sampling

Two existing monitoring wells (MW-3 and MW-4) that are located up gradient of PNM's former dehydrator discharge pit were sampled on January 12, 1998. The water from MW-3, which is located near the west edge of location, continued to be non-detect for BTEX components. The water from MW-4, located immediately down gradient of the excavation, still had high BTEX, but the level dropped to less than half of the May 1, 1997 sample. This reduction in contaminant levels may be directly related to the remediation efforts (source removal) that have taken place to date. Table 2 shows the results of the past sampling of these two monitoring wells.

Table 2
Groundwater Sampling Summary
BTEX (ppb)

	1/31/97	5/1/97	1/12/98
MW-3	ND	ND	ND
MW-4	2651	3470	1361

PNM had all the monitoring wells surveyed for location and groundwater elevation on January 12, 1998. The direction and magnitude of the hydraulic gradient, using this most recent data, has not yet been determined. Burlington and/or PNM will provide you with a map showing the details of the recent surveys when it becomes available.

Conclusions

The water quality of the up gradient well (MW#1) indicates that groundwater contamination is not coming from an off site source. The quality of the water from the monitoring well, located approximately 50 feet up gradient of the location, has been tested twice and is within water quality standards.

The recent excavation work done at the Hampton 4M confirmed a second source of groundwater contamination in the southeast corner of the location. The dozer work in the southeast corner of the location revealed hydrocarbon impacted soils to a depth of 15 feet, which is the approximate depth to groundwater. Source removal has been completed. The contaminated soils in this area of Burlington

Resources' former tank battery have all been excavated and taken off location. The source removal appears to be effective as shown by the decrease in dissolved BTEX in monitoring well MW-4.

No evidence has been found indicating that Burlington Resources' operations in the southeast corner of the location have contributed to the free phase hydrocarbons near PNM's former dehydrator pit. High concentrations of dissolved phase hydrocarbons have been found near Burlington's operations, but no free phase. Free phase hydrocarbons have not been found in any of the temporary monitoring wells or completed monitoring wells in Burlington's area of operation. The excavation, which has been open to the groundwater for over a month, has also not shown any evidence of free phase hydrocarbons.

Plan of Action

To address the groundwater contamination associated with Burlington Resources' operations in the southeast corner of the location, plans are to leave the excavation open for a period of time while we monitor the contaminant levels in the down gradient wells. Both MW-4 and the recently drilled MW-8 are located to allow good monitoring immediately down gradient of Burlington's source removal area.

Once a downward trend of contaminant levels is established in the two wells directly down gradient of Burlington's source removal area, the excavation will be backfilled with clean soils. A monitoring well will then be installed in the source area. Water quality from the source well and the down gradient wells will be monitored periodically to show improvement in water quality.

The unique characteristics of the Hampton 4M location pose challenges of site characterization and remediation. Burlington Resources feels that continued groundwater monitoring will show a decrease in contaminant levels up gradient of PNM's former dehydrator pit as a result of the source removal in the southeast corner of the location. If you have questions or additional information is needed, please contact me at (505) 326-9841.

Sincerely,

Ed Hasely
Sr. Staff Environmental Representative

Enclosures: Attachment #1: Hampton 4M Site Diagram
Attachment #2: Geologic Logs and Well Completion Diagrams
Attachment #3: Laboratory Results

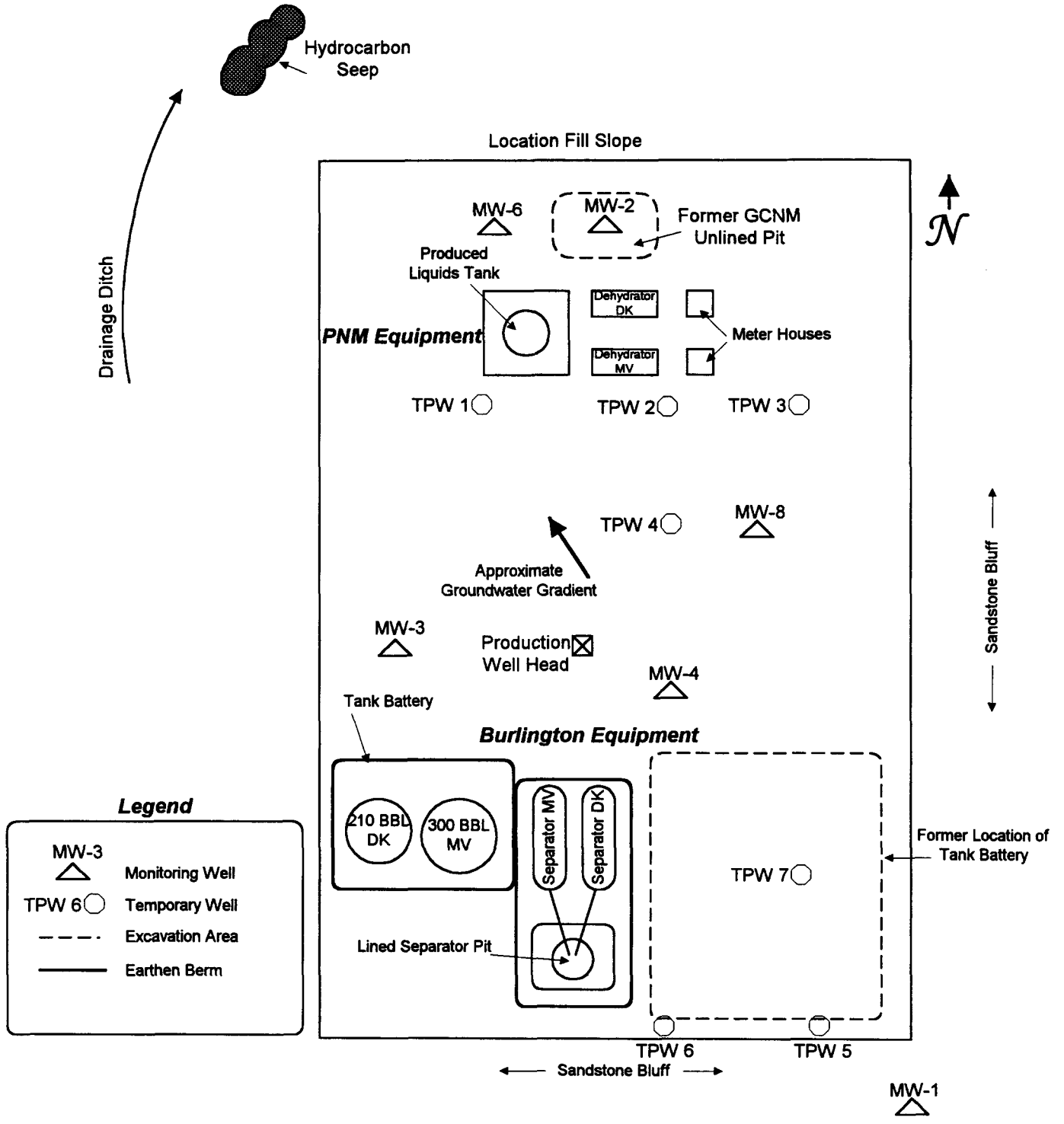
cc: Denny Foust - NMOCD Aztec
Johnny Ellis - BR
Ken Raybon - BR
Keith Baker - BR
Denver Bearden - PNM Farmington
Maurene Gannon - PNM Albuquerque
Hampton 4M File

S: / grndwatr/facility/hampton/981ocd.doc

ATTACHMENT #1

SITE DIAGRAM

Hampton 4M Site Diagram



ATTACHMENT #2

GEOLOGIC LOGS
AND
WELL COMPLETION DIAGRAMS

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-3
Well # MW-1
Page 1 of 2

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

Project Name PNM HAMPTON 4M
Project Number 18839 Phase 6000
Project Location HAMPTON 4M

Elevation
Borehole Location SE Corner of Wellpad on hill
GWL Depth 38.85' BGS
Logged By CM CHANCE
Drilled By K Padilla
Date/Time Started 10/29/97
Date/Time Completed 10/29/97

Well Logged By CM CHANCE
Personnel On-Site D CHARLEY
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4 ID HSA
Air Monitoring Method PID

Depth (Feet)	Sampl Numbe	Sample Interval	Sample Type & Recover (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S	Drilling Conditions & Blow Counts
0										
5										
10										
15										
20	1	18-20	10	Lt Gry/Br weathered SANDSTONE Poorly Cemented, f-med sand, V. dense, dry			0		0/1	-1341 hr
25	2	23-25	12	Br weathered SANDSTONE, Poorly cemented, vf-F sand, v. dense, dry			0		0/1	-1351 hr
30	3	28-30	8	Lt Gry weathered SANDSTONE Fairly cemented, f-med sand, V. dense, dry			0		48/5	-1418 hr
35	4	33-35	6	AA					0/1	-GW@38.85'
40	5	38-40	4	Lt Gry weathered SANDSTONE, Poorly cemented, f-med sand, dense, wet					0/1	

Comments: Location is ~20' above wellpad. Will drill to 20' before sampling. GW @ 38.85' BGS. Will drill 5' more & install well.

Geologist Signature CM Chance

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-3
Well # MW-1
Page 2 of 2

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

Project Name PNM HAMPTON 4M
Project Number 18839 Phase 6000
Project Location HAMPTON 4M

Elevation
Borehole Location
GWL Depth 38.85'
Logged By CM CHANCE
Drilled By K Padilla
Date/Time Started 10/29/97
Date/Time Completed 10/29/97

Well Logged By CM CHANCE
Personnel On-Site D CHARLEY
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4 ID HSA
Air Monitoring Method PID

Depth (Feet)	Sampl Number	Sample Interval	Sample Type & Recover (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S	Drilling Conditions & Blow Counts
40										
45				TDB 43.8'						
50										
55										
60										
65										
70										
75										
80										

Comments:

Geologist Signature

MONITOR WELL INSTALLATION FORM

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

Philip Services Corp.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name PNM HAMPTON 4M
Project Numb 18839 Phase 6000
Site Location HAMPTON 4M

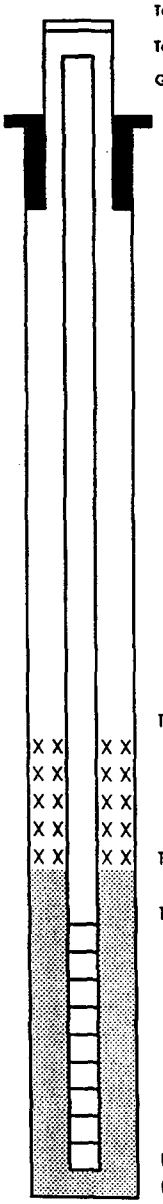
Elevation
Well Location
GWL Depth 38.85' BGS
Installed By K PADILLA

Date/Time Started 10/29/97
Date/Time Complete 10/29/97

On-Site Geologist C CHANCE
Personnel On-Site D CHARLEY
Contractors On-Site
Client Personnel On-Site

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		+3.1
Bottom of Protective Casing		1.8
Top of Permanent Borehole Casing		NA ~~+3.1~~
Bottom of Permanent Borehole Casing		NA ~~2~~
Top of Concrete		NA
Bottom of Concrete		NA
Top of Grout		0
Bottom of Grout		23.5
Top of Well Riser	30' 2"X10'	+3
Bottom of Well Riser	PVC riser	28.5
Top of Well Screen	15' 2"X10'	28.5
Bottom of Well Screen	0.01 slot	43.5
Top of Peltonite Seal	hole plug	23.5
Bottom of Peltonite Seal		25.5
Top of Gravel Pack	10-20 silica	25.5
Bottom of Gravel Pack	SAND	43.5
Top of Natural Cave-In		43.5
Bottom of Natural Cave-In		43.8
Top of Groundwater		38.8
Total Depth of Borehole		43.8



Top of Protective Casing NA ~~+3.1~~ +3.1'
Top of Riser (survey elev.) +3
Ground Surface 0

Top of Seal 23.5
Top of Gravel Pack 25.5
Top of Screen 28.5
Bottom of Screen 43.5
Bottom of Borehole 43.8

Comments Set well @ 43.5' BGS. Hydrate seal w/ 10 gal potable water. Padlock & locking wellcap on well. Well completed

Geologist Signature Cory Chance

MWINSTAL.wk1

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH- 6
Well # MW8
Page 1 of 1

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

Project Name PNM HAMPTON 4M
Project Number 18929 Phase 1001
Project Location HAMPTON 4M

Elevation
Borehole Location Center of Site
GWL Depth ~20' BGS
Logged By CM CHANCE
Drilled By K Padilla
Date/Time Started 12/11/97
Date/Time Completed 12/11/97

Well Logged By CM CHANCE
Personnel On-Site D CHARLEY, P Archuleta
Contractors On-Site
Client Personnel On-Site M. Sikeliano, M. Gannon

Drilling Method 4 1/4 ID HSA
Air Monitoring Method PID

Depth (Feet)	Sample Numbe	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S/MS	Drilling Conditions & Blow Counts
0										
5										
10	1	10-12	18	Br/Gry mottled CLAY, dry, stiff, low-med plastic					2/1	1507h
15	2	14-16	24	Redish Br silty SAND, F-med sand, dense, sl moist					305/38	1520h
	3	16-18	24	Gry/Redish Br clayey SAND, vf-f sand, sl moist, med dense					206/42	1530h
	4	18-19	12	Gry/Redish Br CLAY, dry, low plastic, interbedded siltstone					112/54	1538h
20	5	20-21	12	Gry silty SAND, vf-f sand, moist, med dense					2/1	1544h
	6	22-23	4	Gry silty CLAY, stiff, high plastic, dry					0	1550
25				TOB 25'						
30										
35										
40										

Comments: Note: Sample #6 may have only been sluff. Only 4" of recovery
Will set 2" well @ 25' BGS

Geologist Signature Cory Chancy

MONITOR WELL INSTALLATION FORM

Borehole # BH6
Well # MW 8
Page ___ of ___

Philip Services Corp.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name PNM Hampton 4M
Project Number 18929 Phase 1001.77
Site Location Hampton 4M

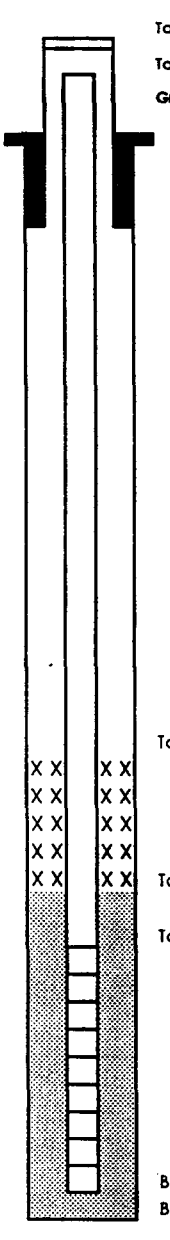
Elevation ___
Well Location Center of Site
GWL Depth ~20' BGS
Installed By K PADILLA

On-Site Geologist C CHANCE
Personnel On-Site D Charley, P. Archuleta
Contractors On-Site ___
Client Personnel On-Site M. Sikelianos, M. Bonner

Date/Time Started 12/11/97
Date/Time Complete 12/11/97

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		+3" NA
Bottom of Protective Casing		9" NA
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete		NA
Bottom of Concrete		NA
Top of Grout		NA
Bottom of Grout		NA
Top of Well Riser		0
Bottom of Well Riser		10
Top of Well Screen		10
Bottom of Well Screen		25
Top of Peltonite Seal		0
Bottom of Peltonite Seal		8
Top of Gravel Pack		8
Bottom of Gravel Pack		25
Top of Natural Cave-In		25
Bottom of Natural Cave-In		25
Top of Groundwater		~20'
Total Depth of Borehole		25



Top of Protective Casing +3"
Top of Riser (survey elev.) 0
Ground Surface 0
Top of Seal 0
Top of Gravel Pack 8
Top of Screen 10
Bottom of Screen 25
Bottom of Borehole 25

Commen Well completed as surface mount. Locking well cap + padlock placed on well. Seal hydrated w/ 5 gal potable water.

Geologist Signature ___

MWINSTAL.wk1

ATTACHMENT #3

LABORATORY RESULTS

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	5-Nov-97
Company:	*PNM Gas Services*	COC No.:	*7080*
Address:	*603 W. Elm*	Sample No.:	*16700*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Hamptom 4M***				
Project Location:	***9710301030; MW-1***				
Sampled by:	MS	Date:	30-Oct-97	Time:	10:30
Analyzed by:	HR	Date:	4-Nov-97		
Sample Matrix:	*Liquid*				

Burlington's well —

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	2.4	ug/L	0.2	ug/L
Toluene	2.3	ug/L	0.2	ug/L
Ethylbenzene	ND	ug/L	0.2	ug/L
m,p-Xylene	1.1	ug/L	0.2	ug/L
o-Xylene	ND	ug/L	0.2	ug/L
TOTAL	5.8	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By:
Date: 11/5/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 4-Nov-97

Internal QC No.: 0559-STD
Surrogate QC No.: 0556-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	20.0	20.7	4	15%
Toluene	ppb	20.0	21.3	6	15%
Ethylbenzene	ppb	20.0	21.2	6	15%
m,p-Xylene	ppb	40.0	40.3	1	15%
o-Xylene	ppb	20.0	21.1	5	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	92	86	(39-150)	3	20%
Toluene	96	87	(46-148)	3	20%
Ethylbenzene	97	92	(32-160)	4	20%
m,p-Xylene	94	88	(35-145)	4	20%
o-Xylene	95	92	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16699-7080	95				
16700-7080	95				
					(RE)
					11/5/97

S1: Flourobenzene

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Denver Bearden	Date:	23-Jan-98
Company:	PNM Gas Services	COC No.:	7086
Address:	603 W. Elm	Sample No.:	17304
City, State:	Farmington, NM 87401	Job No.:	2-1000

Project Name:	PNM Gas Services - Hampton 4M				
Project Location:	9801121030; MW-1				
Sampled by:	MS/MG/RD/RB	Date:	12-Jan-98	Time:	10:30
Analyzed by:	DC	Date:	21-Jan-98		
Sample Matrix:	Liquid				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	4.3	ug/L	0.2	ug/L
Toluene	3.3	ug/L	0.2	ug/L
Ethylbenzene	0.2	ug/L	0.2	ug/L
m,p-Xylene	0.7	ug/L	0.2	ug/L
o-Xylene	0.3	ug/L	0.2	ug/L
TOTAL	8.8	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By:
Date: 1/23/98

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	23-Jan-98
Company:	*PNM Gas Services*	COC No.:	*7086*
Address:	*603 W. Elm*	Sample No.:	*17309*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Hampton 4M***				
Project Location:	***9801121300; MW-8***				
Sampled by:	MS/MG/RD/RB	Date:	12-Jan-98	Time:	13:00
Analyzed by:	DC	Date:	21-Jan-98		
Sample Matrix:	*Liquid*				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	6410	ug/L	20	ug/L
Toluene	17301	ug/L	20	ug/L
Ethylbenzene	693	ug/L	20	ug/L
m,p-Xylene	7612	ug/L	20	ug/L
o-Xylene	1785	ug/L	20	ug/L
TOTAL	33801	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By:
Date: 1/23/98

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 21-Jan-98

Internal QC No.: 0558-STD
Surrogate QC No.: 0567-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	30.0	30.6	2	15%
Toluene	ppb	30.0	30.8	3	15%
Ethylbenzene	ppb	30.0	31.4	5	15%
m,p-Xylene	ppb	60.0	59.7	0	15%
o-Xylene	ppb	30.0	31.1	4	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	102	92	(39-150)	2	20%
Toluene	108	105	(46-148)	2	20%
Ethylbenzene	108	105	(32-160)	3	20%
m,p-Xylene	104	102	(35-145)	3	20%
o-Xylene	110	107	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
17304-7086	101		17310-7086	100	
17305-7086	102				
17306-7086	100				
17307-7086	100				
17308-7086	101				
17309-7086	101				

S1: Flourobenzene

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Scott Pope*	Date:	12-Dec-97
Company:	*Philip Environmental*	COC No.:	*G3687*
Address:	*4000 Monroe Road*	Sample No.:	*17042*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***Burlington Resources - Hampton 4M***				
Project Location:	***B.R.O.G. 01***				
Sampled by:	DB	Date:	4-Dec-97	Time:	13:00
Analyzed by:	DC/HR	GRO Date:	9-Dec-97		
Sample Matrix:	*Soil*	DRO Date:	11-Dec-97		

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Gasoline Range Organics (C5 - C9)	ND	mg kg	0.5	mg/kg
Diesel Range Organics (C10 - C28)	ND	mg kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

GRO QC No.: 0554-STD

DRO QC No.: 0555-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Gasoline Range (C5 - C9)	ND	ppb	1,801	1,869	3.7	15%
Diesel Range (C10 - C28)	ND	ppm	200	195	2.4	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Gasoline Range (C5-C9)	93	92	(80-120)	0	20%
Diesel Range (C10-C28)	95	98	(75-125)	3	20%

Method: *SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography*

Approved by:

Date: 12/12/97

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Scott Pope*	Date:	10-Dec-97
Company:	*Philip Environmental*	COC No.:	*G3687*
Address:	*4000 Monroe Road*	Sample No.:	*17042*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***Burlington Resources - Hampton 4M***				
Project Location:	***B.R.O.G. 01***				
Sampled by:	DB	Date:	4-Dec-97	Time:	13:00
Analyzed by:	DC	Date:	8-Dec-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	3	ug/kg	1	ug/kg
Toluene	6	ug/kg	1	ug/kg
Ethylbenzene	1	ug/kg	1	ug/kg
m,p-Xylene	17	ug/kg	1	ug/kg
o-Xylene	3	ug/kg	1	ug/kg
TOTAL	31	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 12/10/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 8-Dec-97

Internal QC No.: 0559-STD
Surrogate QC No.: 0556-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	*Result*	*Unit of Measure*
Average Amount of All Analytes In Blank	<1.0	ppb

Calibration Check

Parameter	*Unit of Measure*	*True Value*	*Analyzed Value*	*RPD*	*Limit*
Benzene	ppb	60.0	62.9	5	15%
Toluene	ppb	60.0	64.8	8	15%
Ethylbenzene	ppb	60.0	63.0	5	15%
m,p-Xylene	ppb	120.0	123.2	3	15%
o-Xylene	ppb	60.0	63.0	5	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*RPD*	*Limit*
Benzene	96	97	(39-150)	1	20%
Toluene	98	99	(46-148)	1	20%
Ethylbenzene	97	98	(32-160)	1	20%
m,p-Xylene	95	95	(35-145)	0	20%
o-Xylene	97	97	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*Laboratory Identification*	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)		*Limit Percent Recovered*	(70-130)	
17042-G3687	92				
				12/12/97	(JC) 12/10/97

S1: Flourobenzene

PHILIP ENVIRONMENTAL

Chain of Custody Record — Nonchemical Samples

210 West Sand Bank Road
P.O. Box 230
Columbia, IL 62236-0230

(618) 281-7173 Phone
(618) 281-5120 FAX

COC Serial No. G 3687

Project Name Burlington Pits Hampton 4m
Project Number 18959 Phase . Task 8000 . 77
Samplers David Brown

Lab Name ONSITE
Location Farmington

Sample Number	Date	Time	Matrix	Analysis Type: BTX	Analysis Type: TPH	Comments
B.R.O.G. 01	12-4-97	13:00	SOIL	X	X	17042-63687

Relinquished by:

Signature	Date	Time
David Brown	12-4-97	15:05

Received By:

Signature	Date	Time
[signature]	12/4/97	1505

Carrier: Airbill No.

Shipping and Lab Notes:

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

November 24, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-410-431-231

Mr. Craig A. Bock
Burlington Resources
P.O. Box 4289
Farmington, New Mexico 87499-4289

RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE

Dear Mr. Bock:

The New Mexico Oil Conservation Division (OCD) has reviewed Burlington Resources' (BR) September 19, 1997 "SOIL AND GROUNDWATER INVESTIGATION WORK PLAN, HAMPTON 4M - UNIT LETTER N, SECTION 13, TOWNSHIP 30N, RANGE 11W". This document contains BR's work plan to determine the extent of soil and ground water contamination related to BR's activities at the Hampton 4M well site near Aztec, New Mexico.

The above referenced work plan is approved with the following conditions:

1. The soil source remediation activities will be completed by December 19, 1997.

2. After completion of the soil source remediation activities BR will install two additional monitoring wells. One well will be located in the source area at the location of temporary monitor well TPW-7. The second monitor well will be located midway between MW-4 and TPW-3.

3. Ground water from all of the monitor wells will be sampled and analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), Water Quality Control Commission (WQCC) metals and cations and anions using EPA approved methods and quality assurance/quality control procedures.

4. BR will submit a report on the remediation and investigation actions to the OCD by January 31, 1997. The report will contain:

   a. A description of all activities conducted including conclusions and recommendations.

b. A map showing the remediated areas, the monitor well locations and the direction and magnitude of the hydraulic gradient.

c. Geologic logs and well completion diagrams for each monitor well.

d. The laboratory analytical results of all soil and water quality sampling including the quality assurance/quality control data.

e. The disposition of all wastes generated.

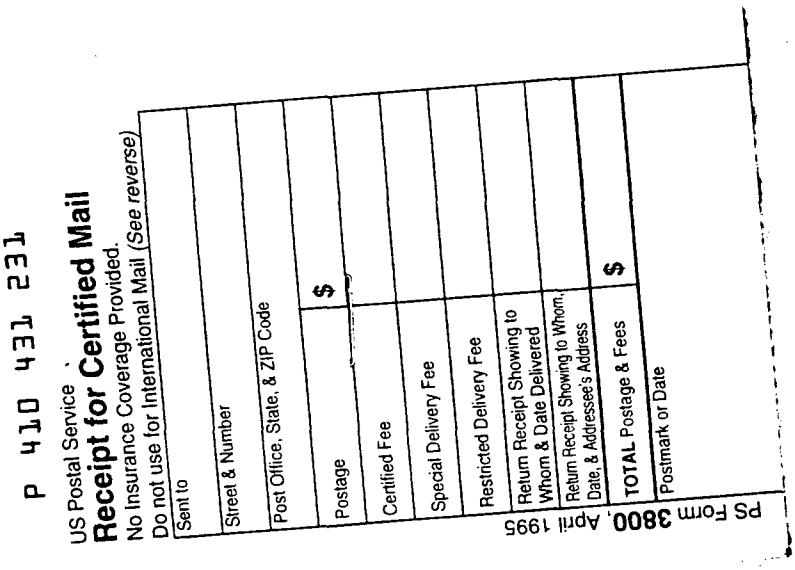
Pleased be advised that OCD approval does not relieve BR of liability if the work plan fails to adequately remediate or define the extent of contamination related to BR's activities. In addition, OCD approval does not relieve BR of responsiblity for compliance with any other federal, state, local or tribal laws and regulations.

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

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Maureen Gannon, PNM



BURLINGTON RESOURCES

SAN JUAN DIVISION

September 19, 1997

RECEIVED
SEP 22 1997

Certified P 358 636 572

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Soil and Groundwater Investigation Work Plan
Hampton 4M - Unit Letter N, Section 13, Township 30N, Range 11W

Dear Mr. Olson

Burlington Resources (Burlington) is submitting this Soil and Ground Water Investigation Work Plan for the Hampton 4M well site. This work plan presents information on monitoring well construction, soil and ground water sampling and analysis, and the tasks to determine the upgradient extent and source of ground water contamination. As required by the NMOCD letter dated August 27, 1997, this work plan only addresses soil and ground water contamination upgradient of PNM's former dehydrator pit.

Monitoring Well Construction

Monitoring wells will typically be constructed of 4 inch diameter, Schedule 40 polyvinyl chloride (PVC) pipe which will extend to approximately 2 feet above the ground surface. The screened interval of the well will be constructed of machine slotted Schedule 40 PVC that will extend 5 feet above and 10 feet below the water table (subject to site conditions). The sand pack will consist of 10-20 silica sand which will extend to approximately 2 feet above the screened section. A bentonite seal will be installed immediately above the sand pack, and will consist of approximately 2 feet of 1/4-inch bentonite holeplug. The remaining annular space will be filled with a neat cement slurry consisting of 5% bentonite. The well be finished with a locking, above-ground well protector padlock, and a 2 feet by 2 feet by 4 inch thick concrete pad. A typical well completion diagram is provided in Figure 1.

Surface and top of casing elevations will be surveyed to the nearest 0.01 foot, as necessary, to determine ground water flow direction.

Soil and Ground Water Sampling

Ground water samples will be collected following well purging procedures (removal of a minimum of 3 well volumes, or until dry). Ground water samples will be collected using containers supplied by the laboratory with the proper preservatives. Zero headspace techniques will be used for those samples requiring analysis for volatile constituents. Collected samples will be stored on ice and delivered under chain-of custody procedures to the analytical laboratory for analyses.

Ground water samples may be analyzed for the following constituents using the referenced methods.

Total Dissolved Solids	Standard Field Methods
Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	EPA Method 602 or 8020
Cations/Anions	Various EPA or Standard Methods
Heavy Metals	EPA Method 6010 or 7000 Series

If a non-aqueous phase liquid is detected in any of the monitoring wells, additional samples will be collected for analysis of Polynuclear Aromatic Hydrocarbons (PAHs) using EPA Method 8100.

Additional samples may be analyzed for Dissolved Oxygen, Carbon Dioxide, pH, Conductance, Temperature, Nitrogen, and Phosphorus. Direct reading field instruments or field test kits may be used to obtain this information, as needed.

Soil samples will be collected using EPA, Standard, or NMOCD established methods. All samples will be collected using containers supplied by the laboratory. Samples collected for laboratory analyses will be stored on ice and delivered under chain of custody procedures to the analytical laboratory.

Soil samples may be analyzed for the following constituents using the referenced methods.

Total Petroleum Hydrocarbons	EPA Method 8015A Mod (C_5 to C_{28})
Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	EPA Method 602 or 8020A or Field Headspace Analysis (PID)

Additional samples may be analyzed for pH, Conductance, Temperature, Nitrogen, Phosphorous, and Microbial Counts. Field instruments, test kits as well as laboratory procedures may be used to obtain this information.

Task 1: Up Gradient Monitoring Well Installation

Previous investigative work has estimated the ground water flows under the site from southeast to northwest. This work has also given some insight as to the eastern and western extent of ground water contamination. The upgradient and downgradient extent of contamination has not been defined.

Upgradient borehole drilling indicates that ground water contamination exists on the southern-most edge of the location (Figure 2: Hampton 4M Site Diagram). To determine the upgradient extent of the ground water contamination, Burlington will install a monitoring well off site and upgradient of the well pad. Figure 2 shows the approximate location of the proposed monitoring well.

In the event that the ground water aquifer in question is not encountered in the proposed monitoring well, Burlington will install another well adjacent to the first well. If no ground water is encountered in either upgradient well, Burlington will conclude that ground water is isolated under the well location and no permanent wells will be installed

Any upgradient ground water that is encountered will be sampled and analyzed to determine, at a minimum, BTEX concentrations. If upgradient ground water samples contain significant levels of BTEX compounds, then Burlington may conclude that an off-site source is responsible, and will seek further guidance from the NMOCD. If, however, upgradient ground water samples contain minimal to no levels of BTEX compounds, then Burlington will conclude the source is on the well pad and will initiate Task 2.

Monitoring wells will also be installed to the north and northwest of the well pad to determine the downgradient extent of the ground water contamination. Burlington will be working in conjunction with PNM for work downgradient of PNM's former dehydrator pit. Conversations with Denver Bearden of PNM indicates that up to three downgradient wells may be needed to delineate the ground water contamination (Figure 2).

Task 2: On Site Source Investigation

Previous investigative work at the site has established that a dissolved phase BTEX component exists in the ground water under portions of the well pad. Figure 2 displays the monitoring wells and temporary wells with the BTEX concentrations found in each. As seen in Figure 2, the highest concentrations of BTEX exists in the southeast quarter of the well pad indicating the source may be located there.

Sandstone bedrock in the southeast quarter of the well pad presents a unique investigative challenge. Investigation using conventional methods, such as a boring rig, would be expensive and may not locate the source (needle in the haystack theorem). A soil vapor analysis is not feasible due the difficulty in penetrating the sandstone. Therefore, if presented with Task 2, Burlington proposes to aggressively investigate the southeast quarter of the location by using equipment capable of removing sandstone. Layers of rock will be systematically ripped and removed allowing the exposed surface to be screened using a Photo Ionization Detector (PID). The process of removal and screening will continue until the source area is located using the PID. Once located, further efforts will focus on source remediation.

Source remdiation will incorporate procedures and methods as defined in Burlington's Unlined Surface Impoundment Closure Plan and Addendums. All of which have been approved by the NMOCD.

Work Schedule

Burlington is currently working with the BLM to obtain archaeological clearance to perform the off-site well installation. Burlington will complete the site investigation as outlined in this work plan within 45 days of the receipt of archaeological clearance. If conditions arise that would prevent Burlington from meeting this schedule, Burlington may seek an extension.

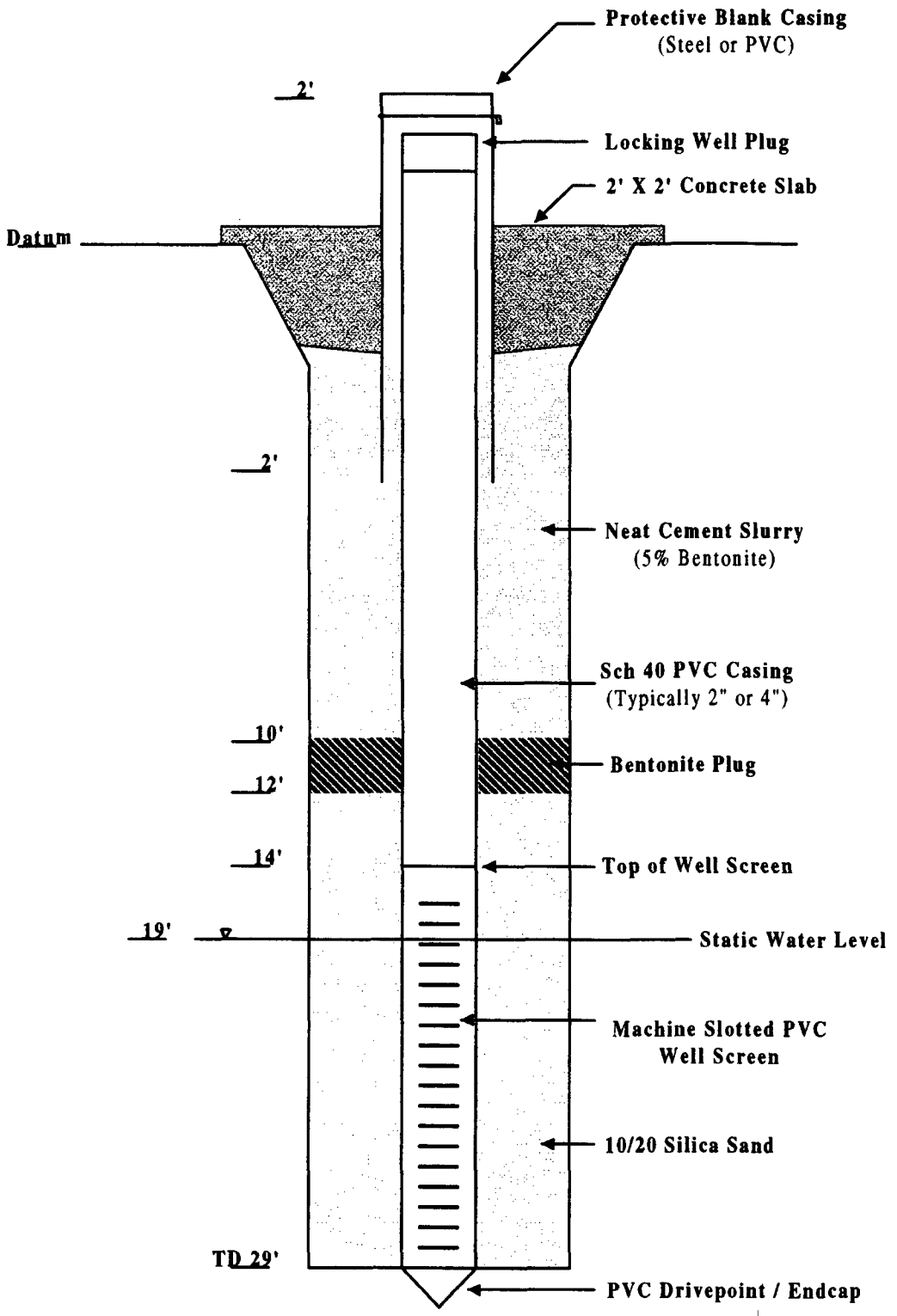
The unique characteristics of the Hampton 4M location pose challenges of site characterization and remediation. All parties working together will be the most efficient means to address the contamination at the Hampton 4M site. If further clarification is needed regarding this matter, please contact me at (505) 326-9537.

Sincerely,

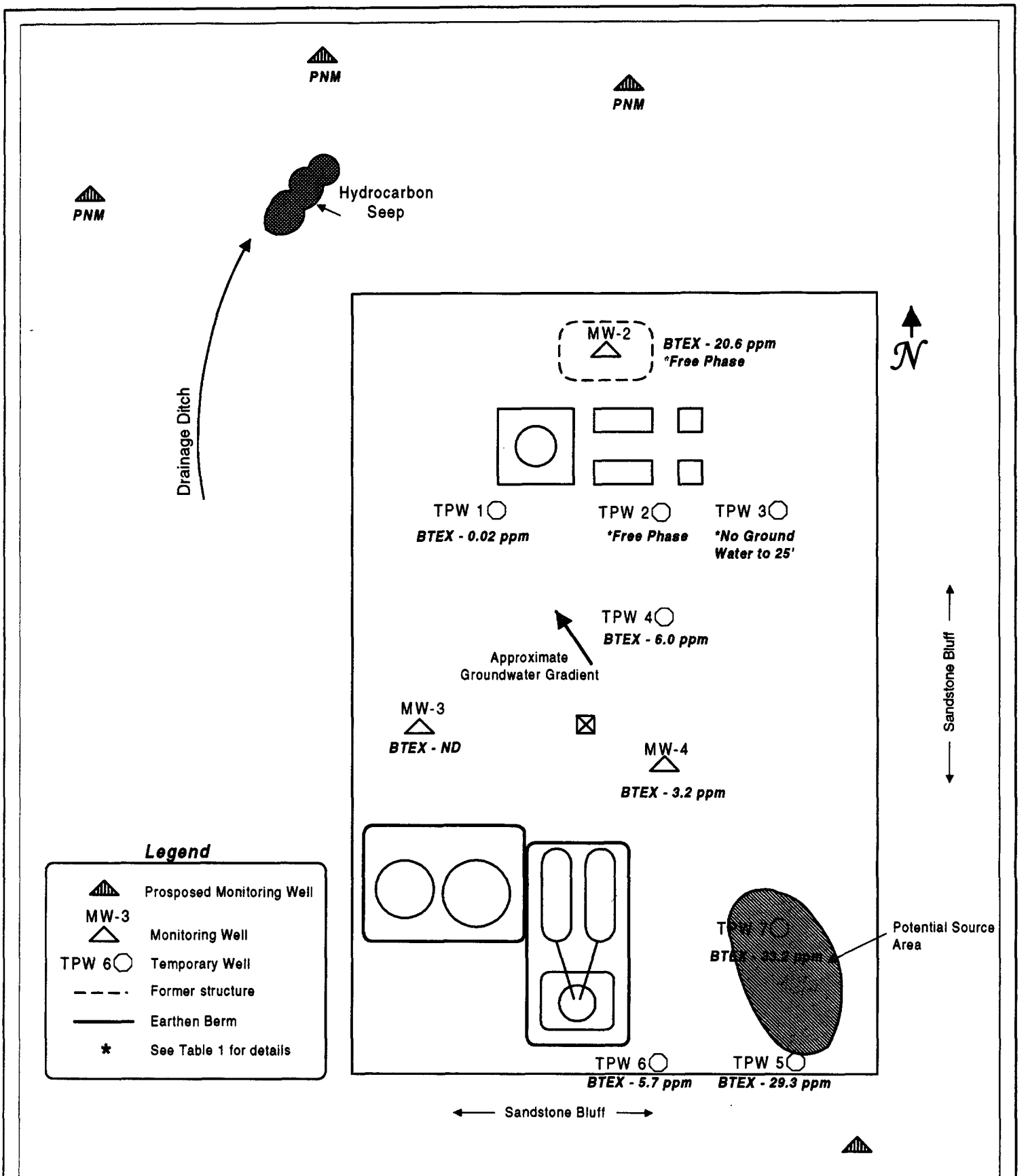
Craig A. Bock
Environmental Representative

Enclosures: Figure 1: Typical Monitoring Well Installation Diagram
Figure 2: Hampton 4M Site Diagram

cc: Denny Foust - NMOCD Aztec
Johnny Ellis - BR
Ken Raybon - BR
Keith Baker - BR
Denver Bearden - PNM Farmington
Maureen Gannon - PNM Albuquerque



Date:	9/18/97	**Figure 1: Typical Well Diagram**	**BURLINGTON RESOURCES** San Juan Division
Originated By:	CAB		



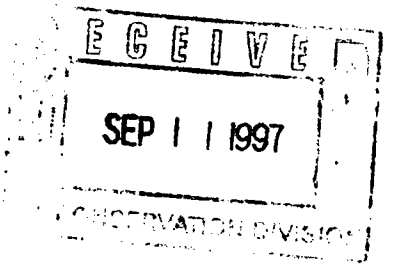
Date	9/18/97	**Figure 2: SITE DIAGRAM** Hampton 4M	**BURLINGTON RESOURCES** San Juan Division
Originated By:	CAB		
USGS 7.5 Minute Series		USGS Quadrangle Name: Aztec, NM	

BURLINGTON RESOURCES

SAN JUAN DIVISION

September 9, 1997

Certified - P 358 636 570



Bill Olson
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Work Plan Submittal Deadline
Hampton 4M Well Site

Dear Mr. Olson:

This letter is to document our phone conversation on September 9, 1997 regarding a Work Plan for the investigation of the Hampton 4M well site. An August 27, 1997 letter from the NMOCD required that Burlington Resources (Burlington) submit a Work Plan to the Santa Fe Office by September 12, 1997.

Due to the complexity of the site, you agreed that Burlington could extend the deadline for Work Plan submittal to September 19, 1997.

If my understanding of this conversation is not correct, please advise me as soon as possible. Otherwise, Burlington will continue with the understanding that the deadline has been changed. If you have any questions or would like to discuss this issue further, please feel free to contact me at (505) 326-9537.

Sincerely,

Craig A. Bock
Environmental Representative

cc: Denny Foust - NMOCD Aztec
K. Baker - BR
J. Ellis - BR
K. Raybon - BR

s:\craig\projman\cooresp\convstn\hmtonext.doc
File: Hampton 4M\correspondence

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

August 27, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-410-431-213

Mr. Craig A. Bock
Burlington Resources
P.O. Box 4289
Farmington, New Mexico 87499-4289

RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE

Dear Mr. Bock:

The New Mexico Oil Conservation Division (OCD) has reviewed Burlington Resources' (BR) August 1997 "BURLINGTON RESOURCES OIL & GAS CO. DATA SUMMARY, HAMPTON 4M PRODUCTION LOCATION". This document contains a summary of BR's recent investigation of soil and ground water contamination at BR's Hampton 4M well site near Aztec, New Mexico.

A review of the above referenced document shows that soil and ground water contamination upgradient of PNM's former dehydration pit appears to be a result of production activities related to BR's Hampton 4M well site. Therefore, the OCD requires that BR submit a detailed soil and ground water investigation work plan for the areas upgradient of PNM's former dehydration pit. The work plan will be submitted to the OCD Santa Fe Office by September 12, 1997 with a copy provided to the OCD Aztec District Office. The work plan will contain detailed information on:

1. How BR plans to conduct investigations as to the source of the contamination.

2. Proposed locations and construction plans for installation of permanent ground water monitoring points which define the extent of ground water contamination.

3. Soil and ground water sampling plans.

4. A schedule for completion of all work elements and submission of a report on the investigations.

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

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Maureen Gannon, PNM

P 410 431 213

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PS Form **3800**, April 1995

BURLINGTON RESOURCES

SAN JUAN DIVISION

July 30, 1997

Certified P 358 636 562

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 85704

RE: Hampton 4M - Groundwater Contamination
Unit Letter N, Section 13, Township 30N, Range 11W

Dear Mr. Olson

On December 16, 1996 PNM Gas Services (PNM) discovered contaminated groundwater at the Hampton 4M gas production location. This location is owned and operated by Burlington Resources Oil and Gas Inc. (Burlington). Since the discovery of contaminated groundwater, action has been taken to identify the source of hydrocarbon contamination.

The Hampton 4M gas production location is located approximately 3 miles East of Aztec, NM (Figure 1). Figure 2 illustrates all equipment and the orientation of that equipment on the pad surface. Burlington owns and operates the location and PNM Gas Services owns and operates two dehydrators with associated equipment on the Northern end of the location. Burlington's equipment is all situated to the South of the well head.

-Work Done To Date-
Beginning in December of 1996, actions have been taken to address the contamination at the Hampton 4M production location. Following is a chronological summary of the events at the Hampton 4M.

December 16, 1996 *Vertical Extent Drilling*	To determine the vertical extent of hydrocarbon contamination in the former dehydrator discharge pit, PNM conducted vertical extent drilling. Beneath the center of the former discharge pit, PNM encountered groundwater at approximately 28 feet. At that time monitoring Well 2, MW-2, was installed (see Figure 2 for monitoring well location). Samples from the groundwater indicated total BTEX of 20,620 ppb v/v and a benzene concentration of 3,840 ppb v/v.
January 13, 1997 *Notification*	PNM notified NMOCD in writing of groundwater contamination at the site.
January 28, 1997 *Sampling*	PNM gauged MW-2 and approximately 4 feet of free phase floating product was discovered in the well.
January 31, 1997 *MW-3 and MW-4 Installation*	PNM installed two additional monitoring wells, MW-3 and MW-4. Water level, product measurements and groundwater samples were taken in all three monitoring wells at the time of the installation. All samples were analyzed for BTEX compounds (RM 8020).
February 4, 1997 *On-site Meeting*	PNM hosted an on-site meeting with the NMOCD, and Burlington to discuss remediation options at the site.
April 9, 1997 *On-site Meeting*	On site visit with Burlington and PNM

April 14, 1997 ***Off-site Hydrocarbon Seep Discovered***	During a site visit Burlington discovered a surface seep of hydrocarbons to the north of the well pad. Free phase hydrocarbons were found seeping from the ground surface into a small drainage area. Burlington notified both NMOCD and PNM about the hydrocarbon seep.
April 16, 1997 ***On-site Meeting***	Burlington hosted an on-site meeting with PNM, and NMOCD to discuss the off-site hydrocarbon seep. NMOCD asked that immediate action be taken to contain the seep. The group agreed that a collection trench should be installed to slow or stop the hydrocarbons seep.
April 16, 1997 ***Archeological Clearance***	Burlington Resources obtained archeological clearance to construct an off-site collection trench to the north of the well location (Figure 2).
April 17, 1997 ***Collection Trench Construction***	Burlington constructed a collection trench to the north of the well location. The trench was situated between the hydrocarbon seep and the well location. A sandstone shelf was encountered six to eight feet below the ground surface. Black to gray saturated soil with signs of hydrocarbons were found on top of the sandstone shelf. No analytical samples were taken. P.I.D. readings were in the 1,000 ppm to 2,000 ppm range. Water and a small amount of hydrocarbons began collecting in the trench.
April 30, 1997 ***Tank Discharge Pit Excavation***	Burlington attempted to excavate the area of the former tank discharge pit. Sandstone was encountered at one foot below the bottom of the pit. The excavator could not penetrate the sandstone. A PID survey of the soil and sandstone revealed no volatile hydrocarbons. No visual signs of hydrocarbon contamination existed. To identify any hydrocarbon contaminated area, Burlington began excavating 9 to 10 test holes over the location. On the southern end of the location sandstone was encountered at 0 to 1 foot below the surface. Sandstone dipped sharply to the north to a depth of approximately 15 feet below the surface. No hydrocarbon contaminated areas were found in any of the test holes.
June 4, 1997 ***On-site Meeting***	Burlington hosted an on-site meeting with PNM and NMOCD to discuss further investigation at the site. The group agreed to continue surveying using a soil boring rig.
June 5, 1997 ***Soil Boring***	Three holes were bored on the site just to the south of PNM's dehydrators and discharge tank. Figure 2 shows the location of each borehole and the results of groundwater and soil samples. Information gathered during the boring was soil characteristics and soil vapor analysis every five feet to groundwater. A soil sample, for laboratory analysis, was taken just above the water level and a groundwater sample will be taken.
June 6, 1997 ***Soil Boring***	Burlington continued soil boring on the location. A total of four more points were bored. These points are shown in Figure 2.
June 10, 199 ***Meeting - Discussion of Boring Results***	Burlington and PNM met to discuss costs for other groundwater sites and to discuss the results of the soil boring at the Hampton 4M.

-Sample Results-

The results of all analytical samples taken to date at the Hampton 4M are listed in Table 1. Provided with the results of the samples is supporting information about the depth to water in feet, the depth the sample was taken in feet, and the matrix of the sample. Water samples were only analyzed for Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) compounds. Each soil sample was analyzed for BTEX compounds and Total Petroleum Hydrocarbons (TPH). Associated backup for all analytical samples is located in Appendix A.

-Monitoring Wells-

Three permanent groundwater monitoring wells were installed on location (Figure 2). Monitoring Well 2 (MW-2) was installed in the center of the former gas dehydrator discharge pit operated by PNM. MW-3 and MW-4 were installed to establish the groundwater gradient under the location. A contour map of the groundwater was developed from water level information in the monitoring wells (Figure 3). The contour surface map shows the groundwater flows northwest across the location.

Groundwater in the permanent monitoring wells has been sampled twice. Results of the sampling events are summarized in Table 1. Samples of groundwater in MW-3 and MW-4 for BTEX compounds revealed dissolved phase contamination in MW-4 but not in MW-3, indicating a contamination source upgradient of MW-4. Approximately 4 feet of a Non-Aqueous Phase Liquid (NAPL) was discovered on the top of the groundwater in MW-2.

Samples were taken of the NAPL in MW-2 and compared to samples of produced hydrocarbons stored on the location. Fingerprinting analysis revealed that the NAPL in MW-2 is similar to produced hydrocarbons from the Dakota formation stored on location. Copies of the analysis and results are provided in Appendix A - Sample Backup. Due to the NAPL, the groundwater from MW-2 well has not been analyzed for BTEX compounds.

It is thought that there are two separate sources of groundwater contamination at the Hampton 4M location. One source is the former discharge pit for the gas dehydrators operated by PNM and the second source being upgradient of MW-4 supplying a dissolved phase BTEX component. This is supported by the fact that a NAPL on the groundwater has only been found in the area directly around the dehydration equipment.

-Temporary Wells-

To identify the second contaminant source, Burlington initiated an investigation using a hollow stem auger and split spoon sampler. A total of seven Temporary Wells (TPW) were drilled at the location. While drilling each TPW, soil samples were taken every five feet and screened using a Photo Ionization Detector (PID). Results of the soil screening were recorded in drilling logs (Appendix B - Drilling Logs). Also in each well a soil sample was captured just above the groundwater interval to be analyzed, in a laboratory, for TPH and BTEX components.

In order to sample the groundwater in a TPW, screened PVC pipe was installed in the well and groundwater was allowed to flow in. Once the water level became static, a sample of the water was taken using a disposable Teflon bailer. The water sample was properly preserved and analyzed, in a a laboratory, for BTEX components.

TPW 1 through 3 were drilled in an east to west transect just to the south of PNM's gas dehydration equipment. TPW 4 was drilled midway between TPW 2 and MW-4. The remainder of the temporary wells were drilled to the south of MW-4 to locate the source of dissolved phase BTEX contamination. TPW 5 and 6 were drilled on the southern most boundary of the production location. The seventh temporary well (TPW 7) was drilled directly under the former location of the produced hydrocarbon storage tanks. Relative locations of the temporary wells can be seen in Figure 2.

-TPW Sampling Results-

Contamination to some degree was found in each groundwater sample from the temporary wells. The highest dissolved phase concentrations occurred in TPW 7 and TPW 5. This result may indicate a source that is off site, upgradient of TPW 5. A NAPL was found on top of the groundwater in TPW 2, therefore no groundwater sample was taken.

Soil screening while drilling the TPWs revealed no hydrocarbon contamination in the soil from the surface to several feet above the groundwater zone. For example, the TPW Record of Subsurface Exploration (Appendix B - Drilling Logs) shows no volatile contamination (using a PID) until just above the groundwater zone (see Air Monitoring column). Results are similar at each TPW.

Since no contamination exists until just above the saturated zone this may indicate subsurface flow of contaminants to that particular sampling location. This result may or may not indicate contamination from an off site source. The geology of the location may cause a release on the surface to channel through fractures while traveling downward through the soil. This channeling effect may not leave a direct trail of contaminants in the soil directly under the release site. Leading to the possible conclusion that the soil auger did not penetrate the contaminant channels leading to the groundwater.

-Location Geology-

Drilling logs were compiled from each Monitoring Well and Temporary Well that was drilled on the location. Copies of all the drilling logs are in Appendix B - Drilling Logs. Generally the logs show that a sandstone shelf underlies the entire site. The sandstone surfaces in the southern half of the site and dips northward to a depth of approximately 18 feet on the edge of the location. During construction, fill material was used to level the surface of the location on the northern half.

And generally groundwater was encountered just below the sandstone layer and above a green to gray clay material.

-Conclusions-

Based on the work done at the Hampton 4M, Burlington Resources firmly believes that contamination to the groundwater under the location is caused by at least two sources. Source No. 1 has been identified as PNM's unlined earthen dehydrator discharge pit. Source No. 2 is contributing dissolved BTEX to the groundwater upgradient to MW-4.

To identify Source No. 2, probable locations were investigated with the soil auger, but no on site source was identified. Groundwater contaminant levels from TPW 5 and TPW 6, on the southern most edge of the location, indicates the second source may be off site and upgradient of the well location. A survey of nearby facilities revealed a pipeline drip pot approximately 1/4 mile to the southeast of the well location.

Results of groundwater sampling over the location indicates a significant amount of NAPL on the top of the groundwater under the gas dehydration equipment operated by PNM. NAPL from the area under the dehydration equipment has migrated to the northwest and is the source of hydrocarbons surfacing in the seep.

-Plan of Action-

The most immediate concerns at the Hampton 4M are the hydrocarbon seep to the northwest and the NAPL on the groundwater in the area of the gas dehydration equipment. These two areas should be the focus of initial activities. NAPL recovery should be implemented in MW-2. Because the NAPLs found to date are located near the former dehydrator discharge pit, Burlington believes this initial action should be the responsibility of PNM Gas Services.

Burlington Resources will focus on identifying the source of groundwater contamination upgradient of MW-4. Burlington proposes constructing a small pad off site and upgradient of the well location to conduct an investigation of the groundwater. Results from the off site investigation will determine the background levels of contaminants in the groundwater flowing to the Hampton 4M location.

If through the off site investigation, Burlington discovers the influence of an off site source then Burlington will cease operations and consult with the NMOCD about other responsible parties. However, if Burlington discovers no contaminants in the groundwater flowing to the Hampton 4M location, then further investigation will be conducted on site.

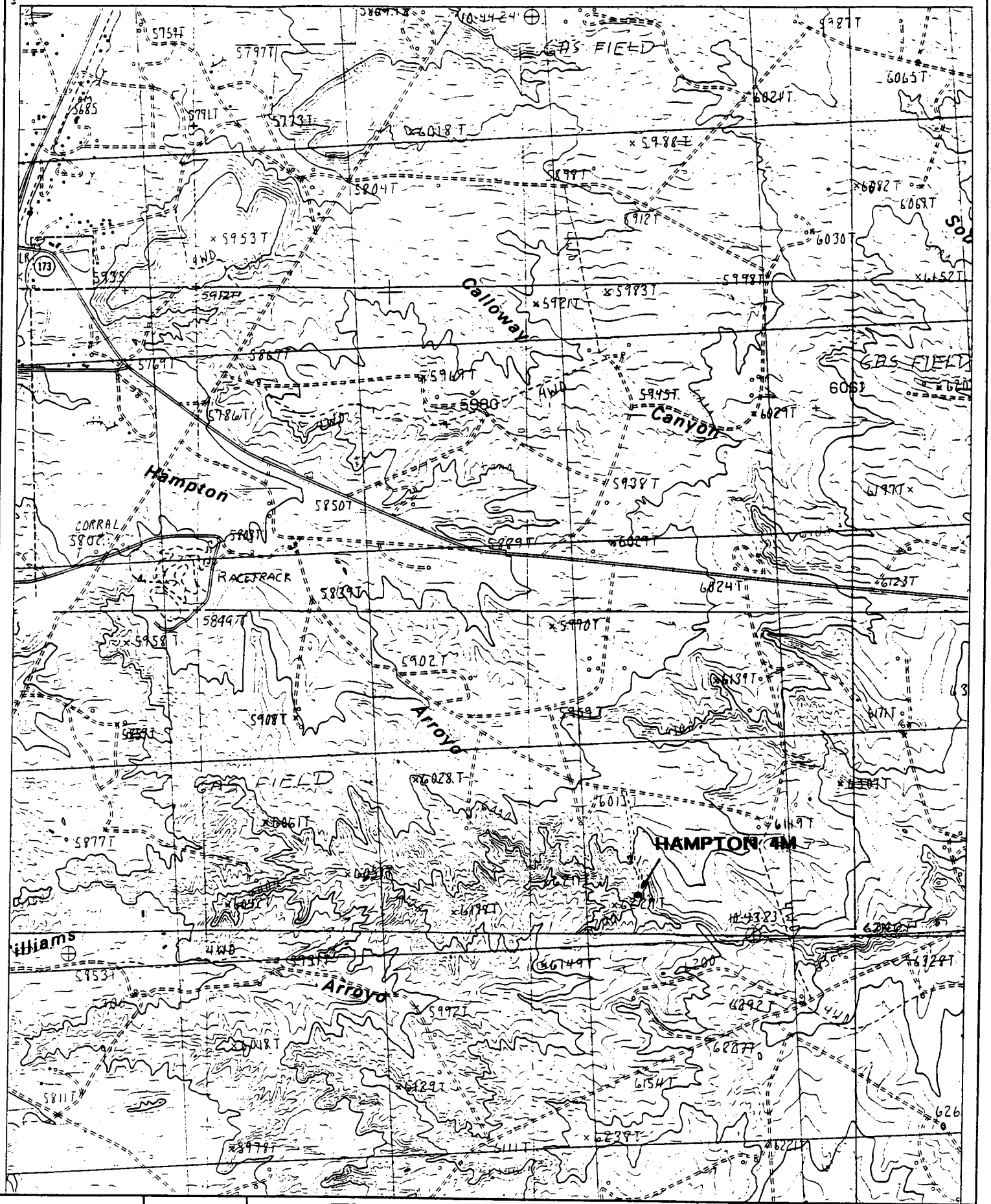
The unique characteristics of the Hampton 4M location pose challenges of site characterization and remediation. All parties working together will be the most efficient means to address the contamination at the Hampton 4M site. If further clarification is needed regarding this matter, please contact me at (505) 326-9537.

Sincerely,

Craig A. Bock
Environmental Representative

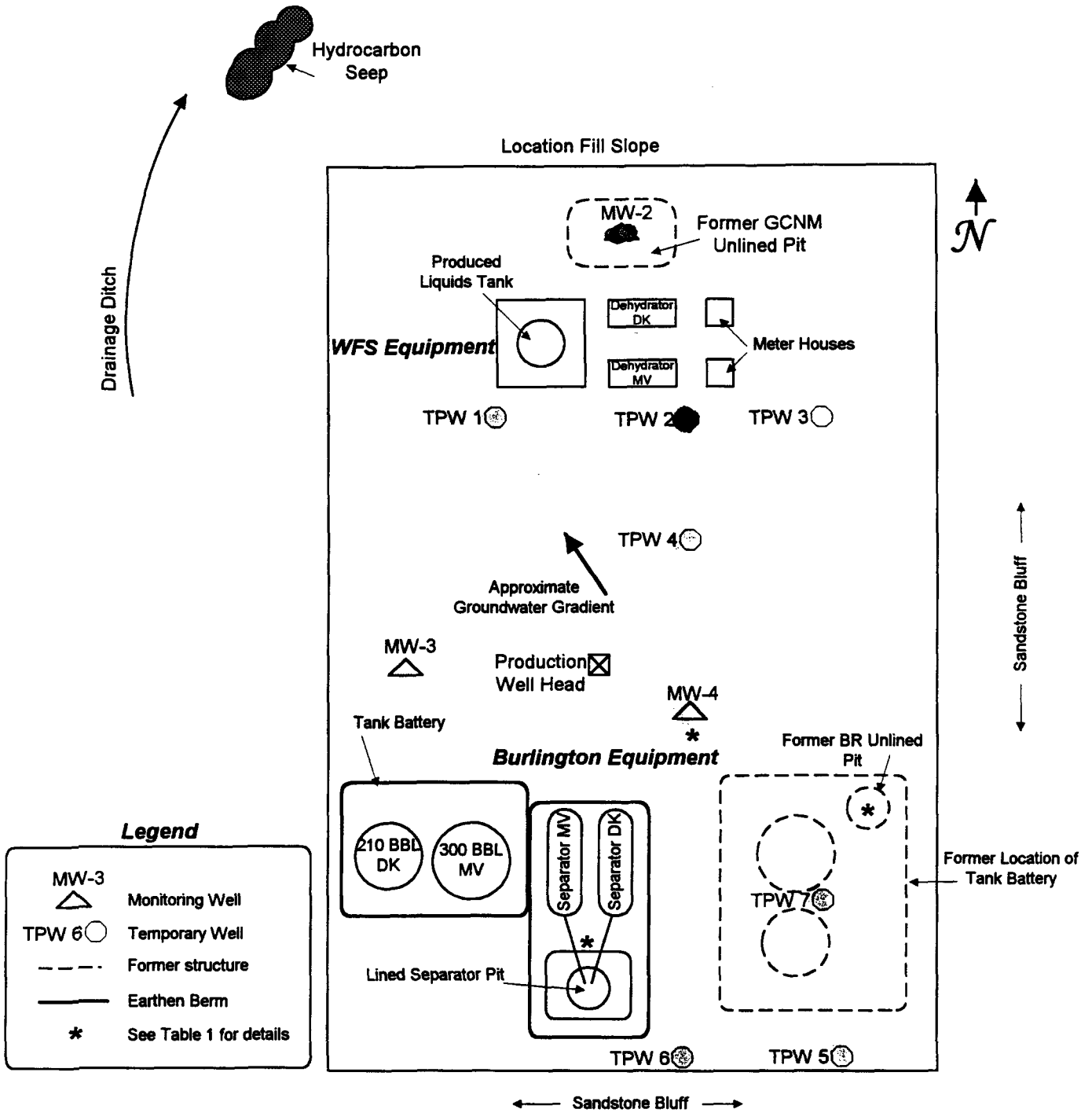
Enclosures: Figure 1: Area Map
Figure 2: Hampton 4M Site Diagram
Figure 3: Groundwater Contour Map
Table 1: Sample Results
Appendix A - Sample Back up
Appendix B - Drilling Logs

cc: Denny Foust - NMOCD Aztec
Johnny Ellis - BR
Ken Raybon - BR
Keith Baker - BR
Denver Bearden - PNM Farmington
Maurene Gannon - PNM Albuquerque



Date:	7/28/97	**Figure 1: Area Map**	***BURLINGTON RESOURCES***
Originated By:	CAB	**Hampton 4M**	***San Juan Division***
USGS 7.5 Minute Series	**USGS Quadrangle Name**	AZTEC, NM	

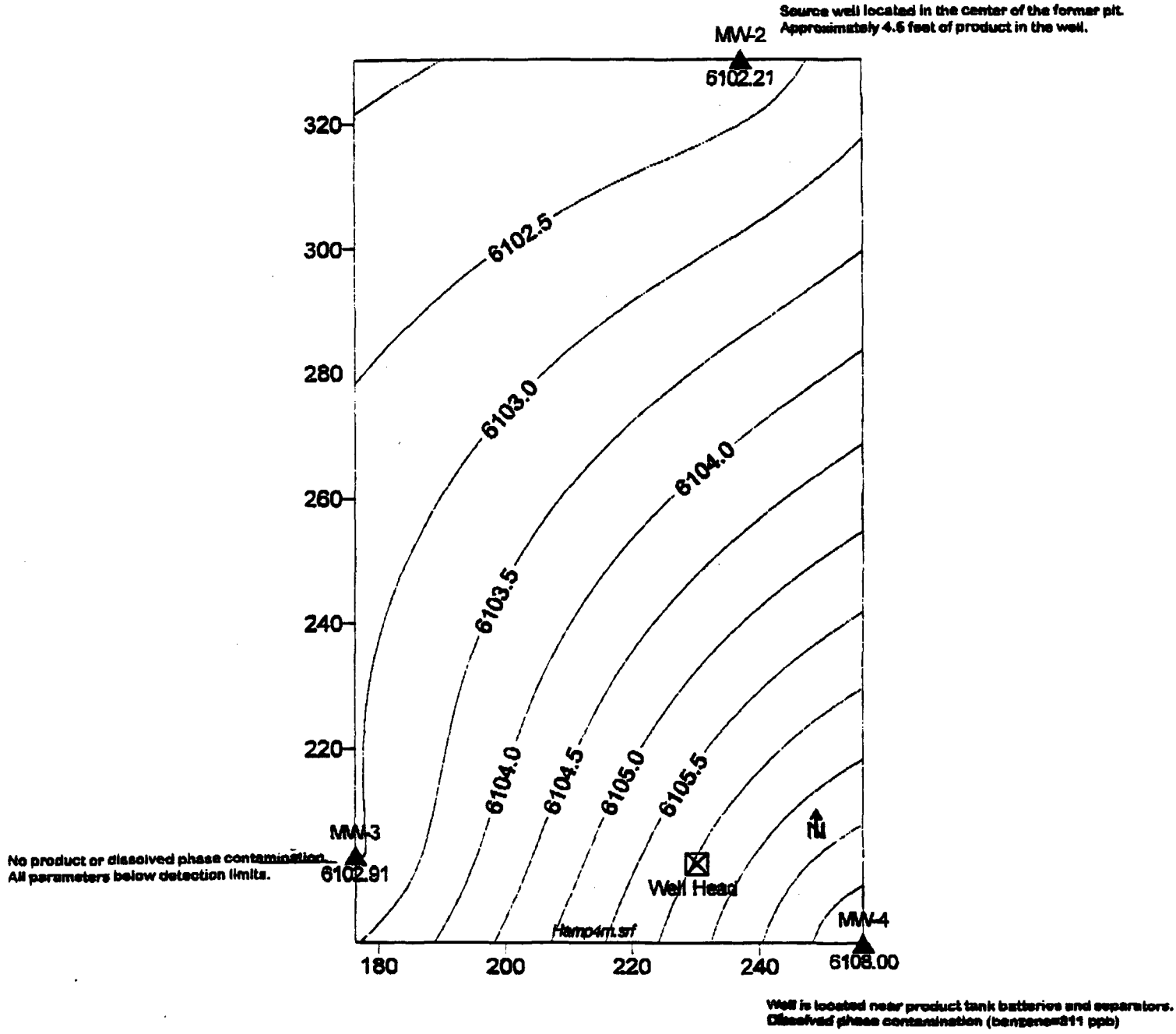
Figure 2: Hampton 4M Site Diagram



Groundwater Sampling Summary

Location (See Figure 2)	Sample Date	BTEX (ppb)	Depth to Water (ft)	Sample Matrix	Comments
MW-2	12/16/96	20,620	--	water	Taken by PNM
MW-3	1/31/97	ND	20	water	Taken by PNM
MW-3	5/1/97	ND	20	water	
MW-4	1/31/97	2,651	16.4	water	Taken by PNM
MW-4	5/1/97	3,477	16.4	water	
MW-4	5/1/97	3,470	16.4	water	Blind Duplicate Sample
TPW 1	6/5/97	20	22.75	water	
TPW 4	6/6/97	5,967	19	water	
TPW 5	6/6/97	29,260	15	water	
TPW 6	6/6/97	5,738	15	water	
TPW 7	6/6/97	33,220	14.6	water	

Figure 3: Hampton 4M Groundwater Contour Map (January 1997)



Location	*X*	*Y*	*TOC Elevation (feet)*	*GW Elevation (feet)*	*DTW 1/4/97 (feet)*	*DTP 1/4/97 (feet)*
MW-2	237.36	330.165	6124.088	*6102.208	25.28	20.75
MW-3	176.435	202.725	6122.943	6102.913	20.03	N/A
MW-4	256.437	188.695	6124.372	6103.002	16.37	N/A
Well Head	232.926	205.649	6124.241	—	—	—
Former Tank Battery	290.325	169.909	—	—	—	—

*Adjusted water level based on 4.53 feet of product and a specific gravity of 0.75.
X and Y are relative distances TOC - Top Of Casing DTW - Depth to Water
DTP - Depth to Product GW - Groundwater

TABLE 1: HAMPTON 4M

Sample Results

Location (SeeFigure 2)	*Sample Date*	*Sample Number*	*TPH (ppm)*	*BTEX (ppb)*	*Depth to Water (ft)*	*Sample Depth (ft)*	*Sample Matrix*	*Comments*
MW-2	12/16/96	TB #1	N/A	20,620	--	--	water	Taken by PNM
MW-3	1/31/97	MW-03	N/A	ND	20	N/A	water	Taken by PNM
MW-3	5/1/97	MW-03	N/A	ND	20	N/A	water	
MW-4	1/31/97	MW-04	N/A	2,651	16.4	N/A	water	Taken by PNM
MW-4	5/1/97	MW-04	N/A	3,477	16.4	N/A	water	
MW-4	5/1/97	MW-54	N/A	3,470	16.4	N/A	water	Blind Duplicate Sample
TPW 1	6/5/97	TPW-01-25-26	ND	ND	22.75	25	soil	
TPW 1	6/5/97	TPW-01	N/A	20	22.75	N/A	water	
TPW 2	6/5/97	TPW-02-25-26	600	59,600	23.38	25	soil	Free hydrocarbons on water
TPW 3	6/5/97	TPW-03-25-26	25	ND	N/A	25	soil	Groundwater not encountered.
TPW 4	6/6/97	TPW-04	N/A	5,967	19	N/A	water	
TPW 4	6/6/97	TPW-04-20-21.5	52	148	19	20	soil	
TPW 5	6/6/97	TPW-05	N/A	29,260	15	N/A	water	
TPW 5	6/6/97	TPW-05-15-16	61	46,500	15	15	soil	
TPW 6	6/6/97	TPW-06	N/A	5,738	15	N/A	water	
TPW 6	6/6/97	TPW-06-15-16.5	11	8	15	15	soil	
TPW 7	6/6/97	TPW-07	N/A	33,220	14.6	N/A	water	
TPW 7	6/6/97	TPW-07-15-16	250	271,000	14.6	15	soil	
N. of Lined Separator Pit *	4/30/97	APP-6.5-01	ND	ND	N/A	6.5	soil	
Former BR Unlined Pit *	4/30/97	OP-3-01	ND	2	N/A	3	soil	
S. of MW 4 *	4/30/97	SSMW4-2-01	274	9	N/A	2	soil	

* Refer to Figure 1: Hampton 4M Site Diagram

APPENDIX A

SAMPLE BACK UP

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

MW-2

Client:	Public Service Co. of NM.	Project #:	93108-02
Sample ID:	TB #1	Date Reported:	12-18-96
Chain of Custody:	5035	Date Sampled:	12-16-96
Laboratory Number:	A842	Date Received:	12-16-96
Sample Matrix:	Water	Date Analyzed:	12-17-96
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det Limit (ug/L
Benzene	3,840	10	1.8
Toluene	7,960	10	1.7
Ethylbenzene	896	10	1.5
p,m-Xylene	5,600	10	2.2
o-Xylene	2,320	10	1.0
Total BTEX	20,620		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	101 %
	Bromofluorobenzene	98 %

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1994.

Comments: 2.1 Miles South on CR 2585, Hampton #4M (@ GW).

Analyst

Review

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Denver Bearden	Date:	3-Feb-97
Company:	PNM Gas Services	COC No.:	5735
Address:	603 W. Elm	Sample No.:	13616
City, State:	Farmington, NM 87401	Job No.:	2-1000

Project Name:	PNM Gas Services - Hampton 4M				
Project Location:	9701311500; MW-3				
Sampled by:	MS	Date:	31-Jan-97	Time:	15:00
Analyzed by:	DC	Date:	3-Feb-97		
Sample Matrix:	Liquid				

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene	<0.2	ug/L	0.2	ug/L
Toluene	<0.2	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
TOTAL	<0.2	ug/L		

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by:
Date: 2/3/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Scott Pope*	Date:	5-May-97
Company:	*Philip Environmental*	COC No.:	*C3056*
Address:	*4000 Monroe Road*	Sample No.:	*14428*
City, State:	*Farmington, NM 87401*	Job No.:	*17877*

Project Name:	***Philip Enviromental - Hampton 4M***				
Project Location:	***MW-3***				
Sampled by:	STP	Date:	1-May-97	Time:	14:00
Analyzed by:	DC	Date:	2-May-97		
Sample Matrix:	*Liquid*				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/L	0.2	ug/L
Toluene	ND	ug/L	0.2	ug/L
Ethylbenzene	ND	ug/L	0.2	ug/L
m,p-Xylene	ND	ug/L	0.2	ug/L
o-Xylene	ND	ug/L	0.2	ug/L
TOTAL	ND	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW 846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By:

Date: 5/5/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	3-Feb-97
Company:	*PNM Gas Services*	COC No.:	*5735*
Address:	*603 W. Elm*	Sample No.:	*13617*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Hampton 4M***				
Project Location:	***9701311530; MW-4***				
Sampled by:	MS	Date:	31-Jan-97	Time:	15:30
Analyzed by:	DC	Date:	3-Feb-97		
Sample Matrix:	*Liquid*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	811.7	ug/L	0.2	ug/L
Toluene	1420.5	ug/L	0.2	ug/L
Ethylbenzene	31.0	ug/L	0.2	ug/L
m,p-Xylene	303.8	ug/L	0.2	ug/L
o-Xylene	84.3	ug/L	0.2	ug/L
TOTAL	2651.4	ug/L		

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by:

Date: 2/3/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Scott Pope*	Date:	5-May-97
Company:	*Philip Environmental*	COC No.:	*C3056*
Address:	*4000 Monroe Road*	Sample No.:	*14429*
City, State:	*Farmington, NM 87401*	Job No.:	*17877*

Project Name:	***Philip Enviromental - Hampton 4M***				
Project Location:	***MW-4***				
Sampled by:	STP	Date:	1-May-97	Time:	15:30
Analyzed by:	DC	Date:	2-May-97		
Sample Matrix:	*Liquid*				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	1162	ug/L	2	ug/L
Toluene	1797	ug/L	2	ug/L
Ethylbenzene	41	ug/l	2	ug/L
m,p-Xylene	373	ug/L	2	ug/L
o-Xylene	103	ug/L	2	ug/L
TOTAL	3477	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: DAG

Date: 5/5/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Scott Pope*	Date:	5-May-97
Company:	*Philip Environmental*	COC No.:	*C3056*
Address:	*4000 Monroe Road*	Sample No.:	*14430*
City, State:	*Farmington, NM 87401*	Job No.:	*17877*

Project Name:	***Philip Enviromental - Hampton 4M***				
Project Location:	***MW-54***				
Sampled by:	STP	Date:	1-May-97	Time:	15:35
Analyzed by:	DC	Date:	2-May-97		
Sample Matrix:	*Liquid*				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	1180	ug/L	2	ug/L
Toluene	1755	ug/L	2	ug/L
Ethylbenzene	43	ug/L	2	ug/L
m,p-Xylene	387	ug/L	2	ug/L
o-Xylene	105	ug/L	2	ug/L
TOTAL	3470	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By:
Date: 5/5/97

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706041-01

TPW-01

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton
SITE:
SAMPLED BY: STP
SAMPLE ID: 004375

PROJECT NO:
MATRIX: water
DATE SAMPLED: 06/05/97
DATE RECEIVED: 06/06/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene Method 8020A Analyzed by: JN Date: 06/11/97	20	1.0	ppb
Ethylbenzene Method 8020A Analyzed by: JN Date: 06/11/97	ND	1.0	ppb
Toluene Method 8020A Analyzed by: JN Date: 06/11/97	ND	1.0	ppb
Total Xylene Method 8020A Analyzed by: JN Date: 06/11/97	ND	1.0	ppb
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: JN Date: 06/11/97	20		ppb

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-01

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004372 / TPW-01-25-26

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/05/97
DATE RECEIVED: 06/05/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons EPA 418.1 Analyzed by: MP Date: 06/12/97	ND	10	mg/kg
Benzene Method 8020A Analyzed by: FAB Date: 06/10/97	ND	1.0	ug/kg
Ethylbenzene Method 8020A Analyzed by: FAB Date: 06/10/97	ND	1.0	ug/kg
Toluene Method 8020A Analyzed by: FAB Date: 06/10/97	ND	1.0	ug/kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

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P.O. BOX 1289
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PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-01

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004372 TPW-01-25-26

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/05/97
DATE RECEIVED: 06/05/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Xylene Method 8020A Analyzed by: FAB Date: 06/10/97	ND	1.0	ug/kg
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: FAB Date: 06/10/97	ND		ug/kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-02

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004373 TPW-02.26.26

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/05/97
DATE RECEIVED: 06/05/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons EPA 418.1 Analyzed by: MP Date: 06/12/97	600	10	mg/kg
Benzene Method 8020A Analyzed by: FAB Date: 06/11/97	2000	500	ug/kg
Ethylbenzene Method 8020A Analyzed by: FAB Date: 06/11/97	4600	500	ug/kg
Toluene Method 8020A Analyzed by: FAB Date: 06/11/97	14000	500	ug/kg
Total Xylene Method 8020A Analyzed by: FAB Date: 06/11/97	39000	500	ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

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FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-02

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004373

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/05/97
DATE RECEIVED: 06/05/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: FAB Date: 06/11/97	59600		ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-03

TPW-03-25.26

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004374

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/05/97
DATE RECEIVED: 06/05/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons EPA 418.1 Analyzed by: MP Date: 06/12/97	25	10	mg/kg
Benzene Method 8020A Analyzed by: FAB Date: 06/10/97	ND	1.0	ug/kg
Ethylbenzene Method 8020A Analyzed by: FAB Date: 06/10/97	ND	1.0	ug/kg
Toluene Method 8020A Analyzed by: FAB Date: 06/10/97	ND	1.0	ug/kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

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P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-03

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004374

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/05/97
DATE RECEIVED: 06/05/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Xylene Method 8020A Analyzed by: FAB Date: 06/10/97	ND	1.0	ug/kg
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: FAB Date: 06/10/97	ND		ug/kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-01

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

TPW-04

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004376

PROJECT NO:
MATRIX: water
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene Method 8020A Analyzed by: AA Date: 06/12/97	2000	5.0	ppb
Ethylbenzene Method 8020A Analyzed by: AA Date: 06/12/97	57	5.0	ppb
Toluene Method 8020A Analyzed by: AA Date: 06/12/97	3100	25.0	ppb
Total Xylene Method 8020A Analyzed by: AA Date: 06/12/97	810	5.0	ppb
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: AA Date: 06/12/97	5967		ppb

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-05

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

TPW: 04-20-21.5

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004380

PROJECT NO:
MATRIX: Soil
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons EPA 418.1 Analyzed by: MP Date: 06/13/97	52	10	mg/kg
Benzene Method 8020A Analyzed by: SB Date: 06/11/97	28	1.0	ug/kg
Ethylbenzene Method 8020A Analyzed by: SB Date: 06/11/97	3.4	1.0	ug/kg
Toluene Method 8020A Analyzed by: SB Date: 06/11/97	76	1.0	ug/kg
Total Xylene Method 8020A Analyzed by: SB Date: 06/11/97	40	1.0	ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2388

Certificate of Analysis No. F2-9706048-05

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004380

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: SB Date: 06/11/97	147.4		ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-02

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

TWP-05

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004377

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene Method 8020A Analyzed by: AA Date: 06/12/97	5800	250	ppb
Ethylbenzene Method 8020A Analyzed by: AA Date: 06/12/97	460	250	ppb
Toluene Method 8020A Analyzed by: AA Date: 06/12/97	16000	250	ppb
Total Xylene Method 8020A Analyzed by: AA Date: 06/12/97	7000	250	ppb
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: AA Date: 06/12/97	29260		ppb

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

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PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-06

Twp-05-15.16

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004381

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons EPA 418.1 Analyzed by: MP Date: 06/13/97	61	10	mg/kg
Benzene Method 8020A Analyzed by: SB Date: 06/11/97	4000	1000	ug/kg
Ethylbenzene Method 8020A Analyzed by: SB Date: 06/11/97	4500	1000	ug/kg
Toluene Method 8020A Analyzed by: SB Date: 06/11/97	10000	1000	ug/kg
Total Xylene Method 8020A Analyzed by: SB Date: 06/11/97	28000	1000	ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-06

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004381

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: SB Date: 06/11/97	46500		ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-03

TWP. 06

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004378

PROJECT NO:
MATRIX: water
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene Method 8020A Analyzed by: AA Date: 06/11/97	1600	25	ppb
Ethylbenzene Method 8020A Analyzed by: AA Date: 06/11/97	48	25	ppb
Toluene Method 8020A Analyzed by: AA Date: 06/11/97	3400	25	ppb
Total Xylene Method 8020A Analyzed by: AA Date: 06/11/97	690	25	ppb
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: AA Date: 06/11/97	5738	25	ppb

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

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FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-07

TPW-06-16.-16.5'

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004382

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons EPA 418.1 Analyzed by: MP Date: 06/13/97	11	10	mg/kg
Benzene Method 8020A Analyzed by: SB Date: 06/11/97	ND	1.0	ug/kg
Ethylbenzene Method 8020A Analyzed by: SB Date: 06/11/97	ND	1.0	ug/kg
Toluene Method 8020A Analyzed by: SB Date: 06/11/97	2.8	1.0	ug/mg
Total Xylene Method 8020A Analyzed by: SB Date: 06/11/97	4.8	1.0	ug/kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

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FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-07

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004382

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: SB Date: 06/11/97	7.6		ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-04

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

TPW-07

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004379

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene Method 8020A Analyzed by: AA Date: 06/11/97	5300	100	ppb
Ethylbenzene Method 8020A Analyzed by: AA Date: 06/11/97	620	100	ppb
Toluene Method 8020A Analyzed by: AA Date: 06/11/97	18000	100	ppb
Total Xylene Method 8020A Analyzed by: AA Date: 06/11/97	9300	100	ppb
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: AA Date: 06/11/97	33220	100	ppb

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-08

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

TWP-07-15.16

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004383

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons EPA 418.1 Analyzed by: MP Date: 06/13/97	250	10	mg/kg
Benzene Method 8020A Analyzed by: SB Date: 06/11/97	7000	1000	ug/kg
Ethylbenzene Method 8020A Analyzed by: SB Date: 06/11/97	20000	1000	ug/kg
Toluene Method 8020A Analyzed by: SB Date: 06/11/97	74000	1000	ug/kg
Total Xylene Method 8020A Analyzed by: SB Date: 06/11/97	170000	1000	ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

FARMINGTON LABORATORY
P.O. BOX 1289
FARMINGTON, NEW MEXICO 87499-1289
PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-08

Philip Environmental Corp.
4000 Monroe Rd.
Farmington, NM 87401
ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004383

PROJECT NO:
MATRIX:
DATE SAMPLED: 06/06/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: SB Date: 06/11/97	271000		ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Inc.

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Scott Pope	Date:	6-May-97
Company:	Philip Environmental	COC No.:	C3056
Address:	4000 Monroe Road	Sample No.:	14427
City, State:	Farmington, NM 87401	Job No.:	17877

Project Name:	Philip Environmental - Hampton 4M			
Project Location:	APP-6.5-01 - Active Production Pit			
Sampled by:	STP	Date:	30-Apr-97 Time:	16:35
Analyzed by:	DC	Date:	6-May-97	
Sample Matrix:	Soil			

Laboratory Analysis

Parameter	Results as Received	Limit of Quantitation	Unit of Measure	Method
Total Petroleum Hydrocarbons, TPH	ND	25	mg/kg	EPA Method 418.1

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

Laboratory Fortified Blank/Spike Soil

Laboratory Identification	Analyzed Value	Acceptable Range	Unit of Measure
Laboratory Fortified Blank Soil - QCRS2	<25	<25	mg/kg
Laboratory Fortified Spike Soil - QCSS1	872	828 - 1024	mg/kg

Duplication

Laboratory Identification	% RSD	Limit % RSD
14425-C3056	<LOQ	15.0

Approved by: DC

Date: 5/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Scott Pope	Date:	6-May-97
Company:	Philip Environmental	COC No.:	C3056
Address:	4000 Monroe Road	Sample No.:	14427
City, State:	Farmington, NM 87401	Job No.:	17877

Project Name:	**Philip Environmental - Hampton 4M**				
Project Location:	**APP-6.5-01** - Active Production Pit @ 6.5'				
Sampled by:	STP	Date:	30-Apr-97	Time:	16:35
Analyzed by:	DC	Date:	5-May-97		
Sample Matrix:	Soil				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/kg	1.0	ug/kg
Toluene	ND	ug/kg	1.0	ug/kg
Ethylbenzene	ND	ug/kg	1.0	ug/kg
m,p-Xylene	ND	ug/kg	1.0	ug/kg
o-Xylene	ND	ug/kg	1.0	ug/kg
TOTAL	ND	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography

Approved by: DC

Date: 5/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Scott Pope	Date:	6-May-97
Company:	Philip Environmental	COC No.:	C3056
Address:	4000 Monroe Road	Sample No.:	14426
City, State:	Farmington, NM 87401	Job No.:	17877

Project Name:	Philip Environmental Hampton 4M				
Project Location:	SSMW4-2-01 South mw-4 @ a'				
Sampled by:	STP	Date:	30-Apr-97	Time:	15:40
Analyzed by:	DC	Date:	6-May-97		
Sample Matrix:	Soil				

Laboratory Analysis

Parameter	Results as Received	Limit of Quantitation	Unit of Measure	Method
Total Petroleum Hydrocarbons, TPH	274	25	mg/kg	EPA Method 418.1

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

Laboratory Fortified Blank/Spike Soil

Laboratory Identification	Analyzed Value	Acceptable Range	Unit of Measure
Laboratory Fortified Blank Soil - QCBS2	<25	<25	mg/kg
Laboratory Fortified Spike Soil - QCSS1	872	828 - 1024	mg/kg

Duplication

Laboratory Identification	% RSD	Limit % RSD
14425-C3056	<LOQ	15.0

Approved by:

Date: 5/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Scott Pope	Date:	6-May-97
Company:	Philip Environmental	COC No.:	C3056
Address:	4000 Monroe Road	Sample No.:	14426
City, State:	Farmington, NM 87401	Job No.:	17877

Project Name:	Philip Environmental - Hampton 4M				
Project Location:	SSMW4-2-01				
Sampled by:	STP	Date:	30-Apr-97	Time:	15:40
Analyzed by:	DC	Date:	5-May-97		
Sample Matrix:	Soil				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/kg	1.0	ug/kg
Toluene	2.1	ug/kg	1.0	ug/kg
Ethylbenzene	1.3	ug/kg	1.0	ug/kg
m,p-Xylene	5.8	ug/kg	1.0	ug/kg
o-Xylene	ND	ug/kg	1.0	ug/kg
TOTAL	9.2	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography

Approved by: DC

Date: 5/6/97

OFF: (505) 325 5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Scott Pope	Date:	6-May-97
Company:	Philip Environmental	COC No.:	C3056
Address:	4000 Monroe Road	Sample No.:	14425
City, State:	Farmington, NM 87401	Job No.:	17877

Project Name:	Philip Environmental - Hampton 4M				
Project Location:	OP-3-01 opd Pit @ 3'				
Sampled by:	STP	Date:	30-Apr-97	Time:	15:10
Analyzed by:	DC	Date:	6-May-97		
Sample Matrix:	Soil				

Laboratory Analysis

Parameter	Results as Received	Limit of Quantitation	Unit of Measure	Method
Total Petroleum Hydrocarbons, TPH	ND	25	mg/kg	EPA Method 418.1

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

Laboratory Fortified Blank/Spike Soil

Laboratory Identification	Analyzed Value	Acceptable Range	Unit of Measure
Laboratory Fortified Blank Soil - QCBS2	<25	<25	ug/kg
Laboratory Fortified Spike Soil - QCSS1	872	828 - 1024	mg/kg

Duplication

Laboratory Identification	% RSD	Limit % RSD
14425-C3056	<LOQ	15.0

Approved by: DAG

Date: 5/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Scott Pope	Date:	6-May-97
Company:	Philip Environmental	COC No.:	C3056
Address:	4000 Monroe Road	Sample No.:	14425
City, State:	Farmington, NM 87401	Job No.:	17877

Project Name:	Philip Environmental - Hampton 4M				
Project Location:	OP-3-01				
Sampled by:	STP	Date:	30-Apr-97	Time:	15:10
Analyzed by:	DC	Date:	5-May-97		
Sample Matrix:	Soil				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/kg	1.0	ug/kg
Toluene	ND	ug/kg	1.0	ug/kg
Ethylbenzene	ND	ug/kg	1.0	ug/kg
m,p-Xylene	1.6	ug/kg	1.0	ug/kg
o-Xylene	ND	ug/kg	1.0	ug/kg
TOTAL	1.6	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography

Approved by: [signature]
Date: 5/6/97

ON SITE
TECHNOLOGIES, LTD.

OFF: (505) 325-5667 LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 3-Feb-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0417-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	19.2	4	15%
Toluene	ppb	20.0	19.6	2	15%
Ethylbenzene	ppb	20.0	20.0	0	15%
m,p-Xylene	ppb	40.0	39.0	3	15%
o-Xylene	ppb	20.0	19.7	1	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	92	90	(39-150)	1	20%
Toluene	95	93	(46-148)	1	20%
Ethylbenzene	97	95	(32-160)	1	20%
m,p-Xylene	94	92	(35-145)	1	20%
o-Xylene	95	94	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
13616-5735	97				
13617-5735	96				

S1: Fluorobenzene

(2)

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 5-May-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Analyte	Result	Units of Measure
Average Amount of All Analytes In Blank	<1.0	ppb

Calibration Check

Analyte	Units of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	18.7	7	15%
Toluene	ppb	20.0	19.4	3	15%
Ethylbenzene	ppb	20.0	19.7	1	15%
m,p-Xylene	ppb	40.0	38.1	5	15%
o-Xylene	ppb	20.0	19.7	2	15%

Matrix Spike

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	90	86	(39-150)	4	20%
Toluene	92	88	(46-148)	4	20%
Ethylbenzene	92	87	(32-160)	3	20%
m,p-Xylene	88	83	(35-145)	3	20%
o-Xylene	88	84	(35-145)	3	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovery	(70-130)		Limit Percent Recovery	(70-130)	
S1: Fluorobenzene			S1: Fluorobenzene		
14425-C3056	92				
14426-C3056	92				
14427-C3056	93				
					(DE)
					5/6/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 2-May-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	18.8	6	15%
Toluene	ppb	20.0	19.3	3	15%
Ethylbenzene	ppb	20.0	19.6	2	15%
m,p-Xylene	ppb	40.0	37.7	6	15%
o-Xylene	ppb	20.0	19.5	2	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	88	88	(39-150)	0	20%
Toluene	93	91	(46-148)	1	20%
Ethylbenzene	92	92	(32-160)	0	20%
m,p-Xylene	93	92	(35-145)	0	20%
o-Xylene	92	91	(35-145)	0	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
14428-C3056	94				
14429-C3056	93				
14430-C3056	92				
					(VDL)
					5/5/97

S1: Flourobenzene

CHAIN OF CUSTODY RECORD

5735

ON SITE TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 1/31/97

Page 1 of 1

FEB 05 '97 10:19AM PNM

Purchase Order No.:		Job No.	
SEND INVOICE TO	Name: Denver Bearden		
	Company: PNM Gas Services	Dept. 324-3763	
	Address: 603 W. Elm Street		
	City, State, Zip: Farmington, NM 87401		

REPORT RESULTS TO	Name: Maureen Gannon	Title	
	Company: PNM Gas Services		
	Mailing Address: Alverado Square, Mail Stop 0408		
	City, State, Zip: Albuquerque, NM 87158		
	Telephone No. 505-848-2974	Telefax No.	

Sampling Location: Hampton 4M

Sampler: Mark Sikelianos

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX 8020	LAB ID
MW-3 9701311500	1/31/97		H2O	Ice	2	✓	
MW-4 9701315300			↓	Ice	2	✓	

ANALYSIS REQUESTED

Relinquished by:	Date/Time 1/31/97 1615	Received by:	Date/Time 1/31/97 1615
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date 1/31/97
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:
			Results to be sent to both parties.

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

Chain of Custody Record

PHILIP ENVIRONMENTAL
4000 Monroe Road
Farmington, NM 87401
(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2164

Project Name: HAMPTON 4M
Project Number: 17877 Phase . Task: 6001.77
Samplers: STP
Laboratory: Name SPL; Location FARMINGTON

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	TPH 418.1	BTEX 8020	Comments
TPW-04	6/6/97	1150	WATER	2		X	
TPW-05	6/6/97	1215	WATER	2		X	
TPW-06	6/6/97	1710	WATER	2		X	
TPW-07	6/6/97	1740	WATER	2		X	
TPW-04-20-21.5	6/6/97	0840	SOIL	1	X	X	
TPW-05-15-16	6/6/97	1050	SOIL	1	X	X	
TPW-06-15-16.5	6/6/97	1420	SOIL	1	X	X	
TPW-07-15-16	6/6/97	1615	SOIL	1	X	X	

Relinquished by:

Signature	Date	Time
[signature]	6/9/97	1143

Received By:

Signature	Date	Time
Angie A Randall	6-9-97	11:41

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

- ☐ Cyanide ..... Sodium hyroxide (NaOH)
- ☒ Volatile Organic Analysis ..... Hydrochloric acid (HCl)
- ☐ Metals ..... Nitric acid (HNO_3)
- ☐ TPH (418.1) ..... Sulfuric acid (H_2SO_4)
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Carrier: Airbill No.

Shipping and Lab Notes:

Chain of Custody Record

PHILIP ENVIRONMENTAL
4000 Monroe Road
Farmington, NM 87401
(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 3057

Project Name: Hampton 4m.
Project Number: 17877 Phase . Task .
Samplers: STP
Laboratory: Name SPL
Location: FARMINGTON, NM

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: TPH 418.1	BTEX 8020	Comments
TPW-01-25-26.0	6/6/97	1045	Soil	1	X	X	
TPW-02-25-26	6/5/97	1325	Soil	1	X	X	
TPW-03-25-26	6/5/97	1520	Soil	1	X	X	
TPW-01	6/5/97	1035	Water	2		X	

Relinquished by:

Signature	Date	Time
Scott T. Pope	6/6/97	0740

Received By:

Signature	Date	Time
Janice Cannon	6/6/97	7:35

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

- ☐ Cyanide ..... Sodium hyroxide (NaOH)
- ☒ Volatile Organic Analysis ..... Hydrochloric acid (HCl)
- ☐ Metals ..... Nitric acid (HNO_3)
- ☐ TPH (418.1) ..... Sulfuric acid (H_2SO_4)
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Carrier: Airbill No.

Shipping and Lab Notes:

Chain of Custody Record

PHILIP ENVIRONMENTAL

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 3057

Project Name: Hampton 4m
Project Number: 17877 Phase . Task:
Samplers: STP
Laboratory: Name SPL
Location: FARMINGTON, NM

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: TPH 418.1	BTEX 8020	Comments
TPW-01-25-26'	6/6/97	1045	Soil	1	X	X	
TPW-02-25-26	6/5/97	1325	Soil	1	X	X	
TPW-03-25-26	6/5/97	1520	Soil	1	X	X	
TPW-01	6/5/97	1035	Water	2		X	

Relinquished by:

Signature	Date	Time
Steven T. Pope	6/6/97	0740

Received By:

Signature	Date	Time
Tonia Cannon	6/6/97	7:35

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

- ☐ Cyanide ..... Sodium hyroxide (NaOH)
- ☒ Volatile Organic Analysis ..... Hydrochloric acid (HCl)
- ☐ Metals ..... Nitric acid (HNO_3)
- ☐ TPH (418.1) ..... Sulfuric acid (H_2SO_4)
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Carrier: Airbill No.

Shipping and Lab Notes:

176 4/95

APPENDIX B

DRILLING LOGS

ENVIROTECH INC.

FIELD BORING LOG

MW-2

TE BING No.	MONITOR WELL No.	PROJECT No.	PROJECT NAME:	SHEET: OF:
TB #1	MW-1	93108-02	PNM GAS SERVICES	

MFG. DESIGNATION OF DRILL:	PROJECT LOCATION:
MOBIL DRILL B-61	HAMPTON #4M

TYPE OF BIT:	SURFACE ELEVATION OF TB OR MW:	TOTAL DEPTH OF HOLE:
AUGER DRILLING		45 FT.

DATE		DRILLING Co.:
STARTED:	12/16/96	ENVIROTECH INC.
COMPLETED:	12/16/96	

COMPLETION TYPE:	ENGINEER:	GROUNDWATER DEPTH	TIME
COMPLETED AS MONITOR WELL	AL CHAHARLANG	1045 / 1110	27.8' / 27.75'
	CREW: MS./B.L.		

SURFACE CONDITIONS: GRADED YELLOW SILTY SAND

DIST FROM SURF.	SAMPLE TYPE	SAMPLE No.	OVM READ IN PPM	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL/COMMENTS
					SM	LIGHT BROW SILTY SAND, SLIGHTLY MOIST, MEDIUM-HARD, NO HYDROCARBON ODOR
10					SM	SAME AS ABOVE PLUS STRONG H.C. ODOR (ASSESSMENT FROM SURFACE CUTTING, VISUAL.) @ 12' DARK BROWN STREAK OF SILT TO CLAYEY SAND.
						@ 16' ANOTHER STREAK (THIN LAYER) OF SILTY SAND, DARK BROWN + STRONG H.C. ODOR
20					SM	STRONG H.C. ODOR, VISUAL
						LIGHT GRAY TO GREENISH GRAY SILTY TO CLAYEY SAND, WET, HARD, STRONG H.C. ODOR (COULD BE PRODUCT SATURATED SOIL).
					▽	GROUND WATER TABLE (COLLECTED WATER SAMPLE FOR BTEX (8020) AND TPH (8015). N 2" PRODUCT OBSERVED IN THE BAILER
30					SM	SAME AS ABOVE
					SM	SAME AS ABOVE
					Sm	SAME AS ABOVE. REMOVED CENTER AT RODS TO OBSERVE GROUND WATER @ 1045: G.W. @ 27.8'

BORLOG.DOC - 3/93

BORING LOG

Page 1 of 2

LOCATION MAP:

__1/4 __1/4 SE 1/4 SW 1/4 S 13 T 30N R 11W

SITE ID: Hampton 4M LOCATION ID: MW-3
SITE COORDINATES (ft.):
N _____ E _____
GROUND ELEVATION (ft. MSL): _____
STATE: _____ COUNTY: _____
DRILLING METHOD: Hollow Stem
DRILLING CONTR.: Envirotech
DATE STARTED: 1/31/97 DATE COMPLETED: 1/31/97
FIELD REP.: _____
COMMENTS: _____

LOCATION DESCRIPTION: _____

DEPTH	WELL CONST.	LITH.	SAMPLE USCS	FROM	TO	% REC	BLOW-COUNT	NUMBER OR PID READING	LITHOLOGIC DESCRIPTION (LITH., USCS, GRAIN SIZE PROPORTIONS, WET, COLOR, RNDG., SORT., CONSOL., DIST. FEATURES
									0-5' Sand med-course Slightly clayey moist lt Brown
									5-6' Clay layer Wet olive Brown
5								0.0 PPM	6-7' Clay dark color Slightly Sand Moderate Sorted
					Grout 5% Bentonite Mix				7'-13' Sand med-course SC clayey Moist Yellowish Orange
10				2.5'	Bentonite Plug Hydrated			0.0PPM	13' Sand Med-course Mod sorted moist
					Blank 2" PVC				14'-15' Sandstone layer Yellowish Orange Clayey Moist
15									15'-18' Sand clayey Medium course Yellowish orange moist Mod - Well Sorted
								3.0 PPM? Could be Background	18'-19' Sand clayey Dark color Dark grey Mod. Sorted Moist
									19'-20 Sand clayey course Poorly Sorted Orange Brown Moist
20					10/12 Sand Pack				20'- Sand clayey Med-course Mod Sorted Orange Brown Moist
								42.0 PPM @ 24.5'	24.5' Sand Clayey Med-course Moist Ground Water
25									

BORING LOG
(Continued)

LOCATION ID: MW-3

DEPTH	WELL CONST.	LITH.	SAMPLE USCS	FROM	TO	% REC	BLOW-COUNT	NUMBER OR PID READING	LITHOLOGIC DESCRIPTION (LITH., USCS, GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SORT., CONSOL., DIST. FEATURES)
30								no Reading with PID cutting very wet & disturbed	25'-30' Sand SC Med Grained Wet Orangeish Brown, Mod Sorted low-med Plasticity
				21 - 0.01' Slotted Screen					
				10/12 Sand Pack					30'-35' Sand SM SC med grained wet Slightly consolidated drilling slowed
35				End cap					34-35 Clay olive Brown wet Plasticity
									35' TD of Borehole
									34'-35' Clay olive grey Slight
									34-35' cuttings very wet dark water up From below looks like motor oil ? No Reading with PID 0.0 PPM
40									
45									
50									
55									
60									

Hampton #4m MW #4

BORING LOG

Page 1 of ___

LOCATION MAP:

___1/4 ___1/4 SE 1/4 SW 1/4 S 13 T 30N R 11W

SITE ID: Hampton #4m LOCATION ID: MW 4
SITE COORDINATES (ft.):
N ___ E ___
GROUND ELEVATION (ft. MSL): ___
STATE: N.M COUNTY: San Juan
DRILLING METHOD: Hollow Stem
DRILLING CONTR.: Enviro Tech
DATE STARTED: 1-31-97 DATE COMPLETED: ___
FIELD REP.: ___
COMMENTS: ___

LOCATION DESCRIPTION: ___

DEPTH	WELL CONST.	LITH.	SAMPLE USCS	FROM	TO	% REC	BLOW-COUNT	NUMBER OR PID READING	LITHOLOGIC DESCRIPTION (LITH., USCS, GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SORT., CONSOL., DIST. FEATURES)
1025									2' weathered sandstone
									3' sand yellowish orange
									5' sand some silt yellowish orange SM
5								ϕ	5' 600 lbs pressure on drill hard drilling
		grout							
		Sm							
								ϕ	10' Fine consolodated sand weathered sandstone SM yellowish orange
10									
		Bentonite plug							11' hard drilling to 10' after 10' pressure 150 lbs. ~~fine sand~~ yellowish-orange moderately sorted sand
15		SC							13' Clay
		20' slotted screen							14' sand poorly sorted yellowish-orange SC slight trace of clay
20		Sand						31.3 ppm	17' color change more of a orangish color
								1447 ppm	18' clay olive/GRY
								669	20' clay olive/GRY SC
25								477	23' clay poorly sorted moist DARK GRY

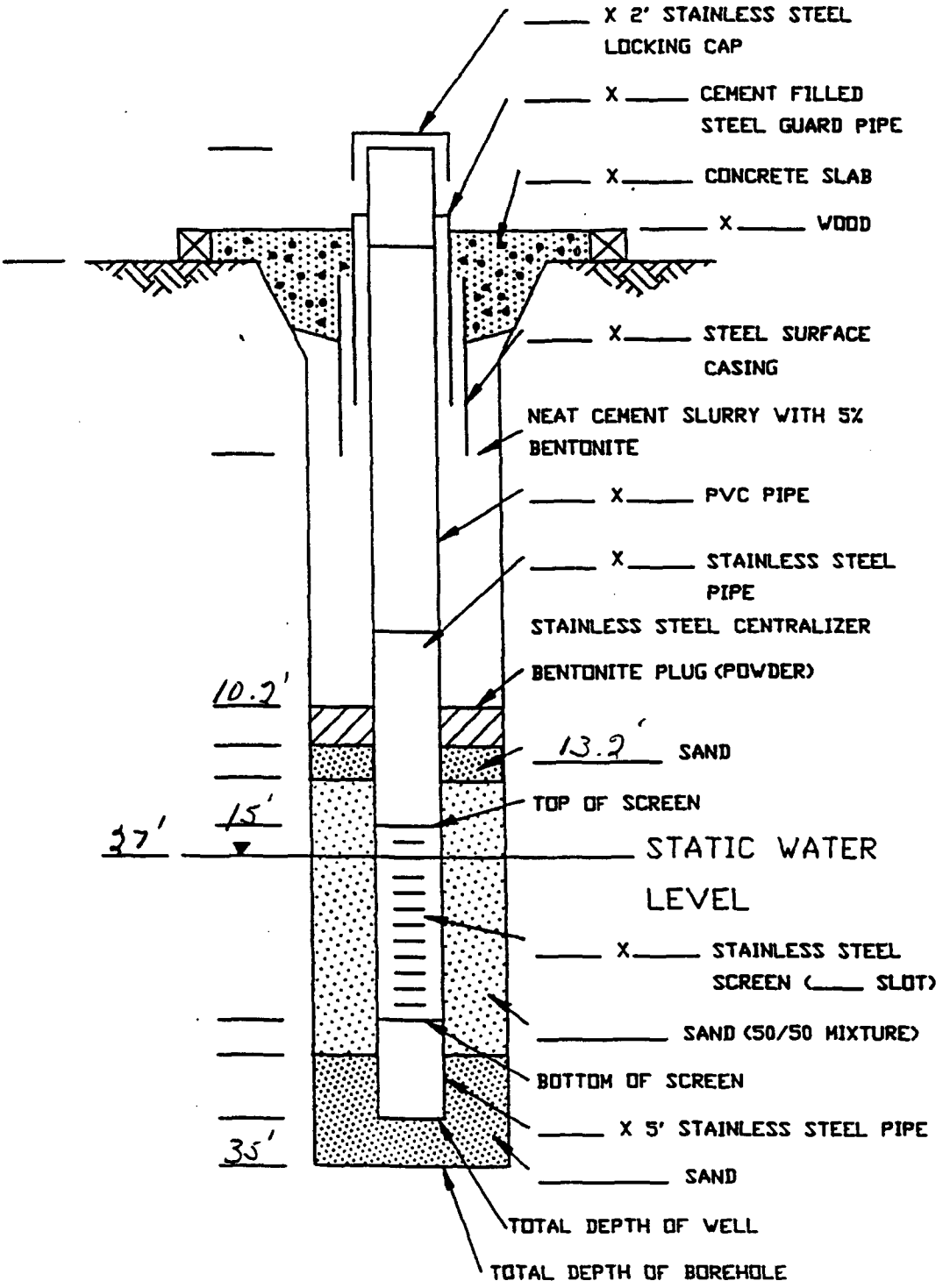
Hampton #4m MW #4

BORING LOG
(Continued)

Page 2 of ___
LOCATION ID: MW-4

DEPTH	WELL CONST.	LITH.	SAMPLE USCS	FROM	TO	% REC	BLOW-COUNT	NUMBER OR PID READING	LITHOLOGIC DESCRIPTION (LITH., USCS, GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SORT., CONSOL., DIST. FEATURES)
			OH					80.7 ppm	27' H_2O
30				slotted screen					GRY color, moist clay
				sand					28' Hard layer clay CH
									GRY color 700 lbs
									to drill thr
									29'
35									30' GRY color clay OH
									high plasticity
									Organic silts
40									31' 900 lbs press.
									hand drilling
									35' GRY Clay OH
45									high plasticity
									hand drilling
									stopped drilling
									Set 20' slotted screen
50									(sand to 13.2'
									Bentnite 10.2'
									grout to surface)
55									
60									

Hampton #4m. MW #4



RECORD OF SUBSURFACE EXPLORATION

Borehole # TPW-01
Well #
Page of

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

Project Name Hampton 4m
Project Number 17877 Phase 6001
Project Location Aztec

Elevation
Borehole Location South West of Site
GWL Depth 22.45
Logged By S. Pope
Drilled By K. Padilla
Date/Time Started 0845 6/5/97
Date/Time Completed 1015 6/5/97

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

Drilling Method HSA 4¼ 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										
5	1	5 7	24	Brown SAND, Med CO grained, trace small stone frags, Soft Moist			0	0	0	Loose Fill
10	2	10 11.5	18	SAA			0	0	0	
15	3	15 17	8	Brown-Gray SAND, trace Clay Med CO grained Very Hard some cementation Moist			0	0	0	Cementation @ 15'
20	4	20 22	12	Brown Gray SAND trace Clay, Cemented Med CO grained, Very Dense, Moist		21	0	0	0	Refusal @ 21' w/spoon
25	5	25 27	10	Greenish Gray SAND, Med-CO grained Very hard, Wet @ Bottom Spoon		26 ▽				Refusal @ 8" on spoon
30	6	30 32	24	Gray SAND COARSE Grain well Sorted, Hard, Saturated TOB 30'						Refusal @ 8"
35										
40										

Comments: 1015 Set 2" w/10 screen in hole Pulled back 5'. WL Prior to Temp well INST. 23.2, 22.45 @ Sample point

Geologist Signature

MONITORING WELL INSTALLATION RECORD

Borehole # TPW-01
Well #
Page ___ of ___

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

Project Name Hamilton 4M
Project Number 18777 Phase 6001
Project Location Aztec

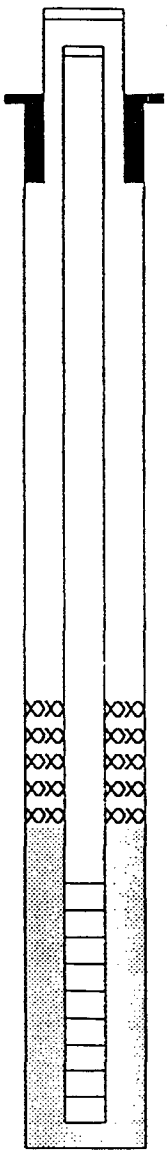
Elevation
Well Location North West Side of Site
GWL Depth 22.45
Installed By K. Padilla

Date/Time Started 1015 6/5/97
Date/Time Completed 1035 6/5/97

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

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		—
Bottom of Protective Casing		—
Top of Permanent Borehole Casing		—
Bottom of Permanent Borehole Casing		—
Top of Concrete		—
Bottom of Concrete		—
Top of Grout		—
Bottom of Grout		—
Top of Well Riser		+.4
Bottom of Well Riser		19.1
Top of Well Screen		19.1
Bottom of Well Screen		29.5
Top of Peltonite Seal		—
Bottom of Peltonite Seal		—
Top of Gravel Pack		—
Bottom of Gravel Pack		—
Top of Natural Cave-In		—
Bottom of Natural Cave-In		—
Top of Groundwater		22.45
Total Depth of Borehole		30'



Top of Protective Casing —
Top of Riser .4
Ground Surface —

Top of Seal N/A
Top of Gravel Pack N/A
Top of Screen 19.1
Bottom of Screen 29.5
Bottom of Borehole 30

Comments: 1015 INSTALLED 2" TEMP WELL W/10' SCREEN. WATER CAME UP TO 22.45
Collect SAMPLE @ 1035 W/Clean Nodden. BACK FILLED BORING TO TD W/ Hole Plug

Geologist Signature Scott T. Pope

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.
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Borehole # TPW-02
Well # TPW-02
Page of

Project Name HAMPTON 4m
Project Number 17877 Phase 6001
Project Location AZTEC

Elevation
Borehole Location Midway North End of Site
GWL Depth 23.95
Logged By S. Pope
Drilled By K. Padilla
Date/Time Started 1145 6/5/97
Date/Time Completed 1300 6/5/97

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

Drilling Method HSA 4 1/4 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										
5	1	5 7	24	BROWN SAND Med-CO grained, Some Clay Moist, Loose			0	0	0	Fill
10	2	10 12	12	Lt BROWN SAND Med CO GRAINED Very dense Possibly Cemented. Trace MOISTURE			0	0	0	Refusal 1"
15	3	15 17	12	SAT Lt BROWN - Yellow DK BROWN Clay, Very Stiff, trace Moisture, Calcium Cry Skulls in Voids,		15.5	0	0	13	Refusal @ 1'
						18.0	0	0	0	
20	4	20 22	12	BROWN SAND, Some clay Med-CO grained, Hard, trace Moisture,			0	0	89	Refusal @ 1'
					23.0	▽ 23.95				
25				Gray Med CO grained SAND very hard, Saturated to 26'			0	0	187	
	5	25 27	20	Gray Silty Clay, Very Dense trace fine sand, moist		27.0	0	0	149+	Refusal @ 22" HS = 851
30				TOB 25						
35										
40										

Comments: water Came up to 23.38 After Sitting 10 Mins Drill to 27' INSTALL TEMP WELL WATER Level Coming up Slowly, will pull AUGERS and leave well IN. Move To Next location

Geologist Signature Scott T. Pope

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(606) 326-2262 FAX (606) 326-2388

Borehole # _____
Well # TPW-02
Page ____ of ____

Project Name HAMPTON 4M
Project Number 17877 Phase 6000.1
Project Location AZTEC, NM

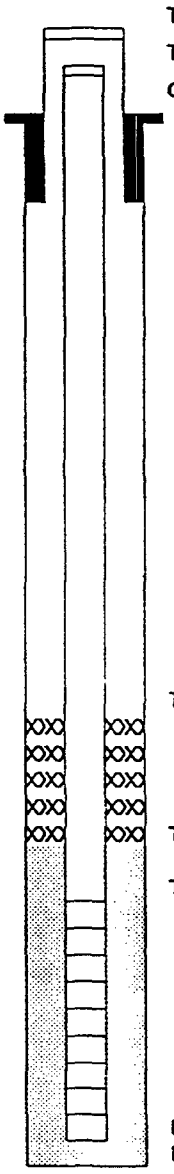
Elevation _____
Well Location MIDWAY NORTH END OF SITE
GWL Depth 23.38
Installed By K. PADILLA

Date/Time Started 1300 6/5/97
Date/Time Completed 1400 6/5/97

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

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		—
Bottom of Protective Casing		—
Top of Permanent Borehole Casing		—
Bottom of Permanent Borehole Casing		—
Top of Concrete		—
Bottom of Concrete		—
Top of Grout		—
Bottom of Grout		—
Top of Well Riser		+3.0
Bottom of Well Riser		14.6
Top of Well Screen		14.6
Bottom of Well Screen		25
Top of Peltonite Seal		—
Bottom of Peltonite Seal		—
Top of Gravel Pack		—
Bottom of Gravel Pack		—
Top of Natural Cave-In	Surface	14.6
Bottom of Natural Cave-In		25
Top of Groundwater		≈ 23.38
Total Depth of Borehole		25.0



Top of Protective Casing —
Top of Riser 43.0
Ground Surface —
Top of Seal —
Top of Gravel Pack —
Top of Screen 14.6
Bottom of Screen 25
Bottom of Borehole 25

Comments: Product Thickness @ 15.55 = .39 Ft
6/6/97 Product Thickness = .96 Ft., 6/9/97 Product Thickness = 2.98 FEET

Geologist Signature Steve T. Pope

RECORD OF SUBSURFACE EXPLORATION

Borehole # TPW-03
Well #
Page of

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

Project Name HAMPTON 4M
Project Number 17877 Phase 6001
Project Location AZTEC, NM

Elevation
Borehole Location NORTH EAST SIDE OF SITE
GWL Depth NOT ENCOUNTERED
Logged By S. POPE
Drilled By K. PADILLA
Date/Time Started 1415 6/5/97
Date/Time Completed 15:30 6/5/97

Well Logged By S. POPE
Personnel On-Site D. CHANLEY
Contractors On-Site —
Client Personnel On-Site —

Drilling Method HSA 4 1/4 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										
5	1	5 7	6	BROWN SAND MED-CO Grained Very hard, trace MOISTURE Some Cementation			0	0	0	REFUSAL @ 6" 1430
10	2	10 12	18	LT BROWN - Reddish BROWN SAND, Med - Co GRAINED, trace silt, Some Oxidation, trace Moisture			0	0	0	REFUSAL @ 18" 1437
15	3	15 17	12	Gray SAND FINE MED GRAINED W/ Some CLAY (Shale) Very hard - Cemented trace MOISTURE		15	0	0	0	REFUSAL @ 12" 1450
20	4	20 21	6	SAA Very hard			0	0	0	REFUSAL @ 6" 1502
25	5	25 27	12"	Gray - DK GRAY SLITY SAND STONE Cemented, trace Clay, Trace MOISTURE VERY HAD			0	0	0	REFUSAL @ 12" 1520
30				TOB - 25						
35										
40										

Comments: NO EVIDENCE OF MOISTURE @ THIS LOCATION WILL NOT DRILL DEEPER
Pull-out and Grout

Geologist Signature Scott T. Payne

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.
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Borehole #
Well # TPW-04
Page of

Project Name HAMPTON 4M
Project Number 17877 Phase 6001
Project Location AZTEC, NM

Elevation
Borehole Location
GWL Depth 20.0/19.0 After Sitting
Logged By S. POPE
Drilled By K. PADILLA
Date/Time Started 1610 6/5/97 / 0830 6/6/97
Date/Time Completed 1645 6/5/97 / 0930 6/6/97

Well Logged By S. POPE
Personnel On-Site D Chenley
Contractors On-Site
Client Personnel On-Site
Drilling Method HSA 4¼" 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										
5	1	5 7	10	BROWN - LT BROWN SAND MED-COGRAINED VERY HARD SOME CEMENTATION EXISTAINS TRACE MOISTURE.			0	0	0	REFUSAL @ 10" 1621
10	2	10 12	10	SAA + TRACE CLAY, MOSTLY COARSE GRAINED			0	6	0	REFUSAL @ 10" 1628
15	3	15 17	12"	SAA			6	0	0	REFUSAL @ 12" 1638 - STOP FOR DAY
20	4	20 22	18	GRAY ~~SAND~~ W/ SOME CLAY, MED-COGRAINED W/ SOME CEMENTATION HARD, WET		20 ▽ 20'	0	0	15	HEADSPACE = 33 PPM REFUSAL @ 18" NO ODOR ON SAMPLE 0845
25	5	25 27	10	GRAY SILT CLAYEY SAND, FINE-VERY FINE GRAINED SOMEWHAT CEMENTED VERY HARD, TRACE MOISTURE TOB-25		25	0	0	0	REFUSAL @ 10" OUT OF WATER WILL PUT WELL IN AND PULL BACK TO 0919
30										
35										
40										

Comments: AFTER INSTALLING WELL LETTING SIT 10-15 MIN WATER @ 27.5. WILL LET SIT AND MOVE TO NEXT LOCATION

Geologist Signature Scott T. Pope

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(606) 326-2262 FAX (606) 326-2388

Borehole # TPW-04
Well # TPW-04
Page ____ of ____

Project Name Hampton 4/M
Project Number 18777 Phase 6001
Project Location Aztec, NM

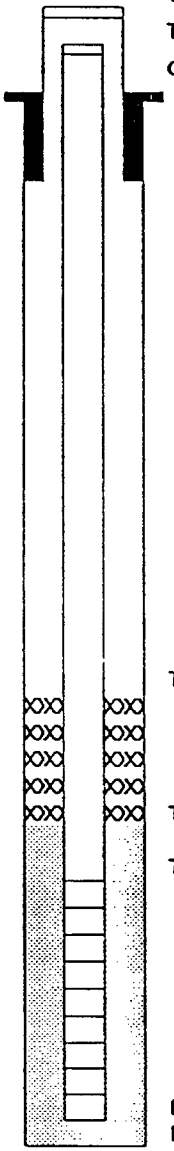
On-Site Geologist S. Pope
Personnel On-Site D. Cherky
Contractors On-Site —
Client Personnel On-Site —

Elevation ____
Well Location Middle of Site
GWL Depth 19
Installed By K. Phillip

Date/Time Started 0920 6/6/97
Date/Time Completed 0945 6/6/97

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		—
Bottom of Protective Casing		—
Top of Permanent Borehole Casing		—
Bottom of Permanent Borehole Casing		—
Top of Concrete		—
Bottom of Concrete		—
Top of Grout		—
Bottom of Grout		—
Top of Well Riser		+1.0
Bottom of Well Riser		14.6
Top of Well Screen		14.6
Bottom of Well Screen		25
Top of Peltonite Seal		
Bottom of Peltonite Seal		
Top of Gravel Pack		—
Bottom of Gravel Pack		—
Top of Natural Cave-In		14.6
Bottom of Natural Cave-In		25
Top of Groundwater		∇ 20
Total Depth of Borehole		25



Top of Protective Casing —
Top of Riser +1.0
Ground Surface —
Top of Seal —
Top of Gravel Pack —
Top of Screen 14.6
Bottom of Screen 25.0
Bottom of Borehole 25.0

Comments: WL = 19.0 FT BGS Prior to Sampling @ 1150

Geologist Signature Scott T. Pope

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.
4000 Monroe Road
armington, New Mexico 87401
(506) 326-2262 FAX (506) 326-2388

Borehole # TPW-05
Well # TPW-05
Page of

Project Name HAMPTON 4m
Project Number 17877 Phase 6001
Project Location AZTEC, NM

Elevation
Borehole Location SE. CORNER OF SITE
GWL Depth 15.0
Logged By S. POPE
Drilled By KPADILLA
Date/Time Started 1000 6/6/97
Date/Time Completed 1110 6/6/97

Well Logged By S. POPE
Personnel On-Site D. Charley
Contractors On-Site
Client Personnel On-Site

Drilling Method HSA 4¼ 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										
5	1	5 7	10	BROWN-TAN SAND W/TRACE SILT ANCHAY, Med-Co Grained, some Ox stains, Gravel, Trace Moisture			0	0	0	REFUSAL @ 10" 1025
10	2	10 12	12	SAA			0	0	20	REFUSAL @ 12" 1035 No Hydrocarbon odor
15	3	15 17	12	SAA, Trace Clay, WET No FREE WATER			0	3	470	REFUSAL @ 12" STRONG HC ODOR NO MEASURABLE WATER In hole,
20	4	20 21	24	GRAY SAND Med-Co Grained, Trace Silt Gravel, SATURATED, Trace Gravel		20	0	0	3	REFUSAL @ 20 WL 17.45 (1110)
25				GRAY, CLAY/Shale very hard, trace fine sand visible Bedding Planes, Trace MOISTURE. TOB - 20		21.5				1210 WL 14.75 SAMPLE @ 1215 No free phase
30										
35										
40										

Comments:

Geologist Signature Scott T. Pope

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
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Borehole # ____
Well # TPW-05
Page ____ of ____

Project Name HAMPTON 4M
Project Number 17877 Phase 6001
Project Location AZTEC NM

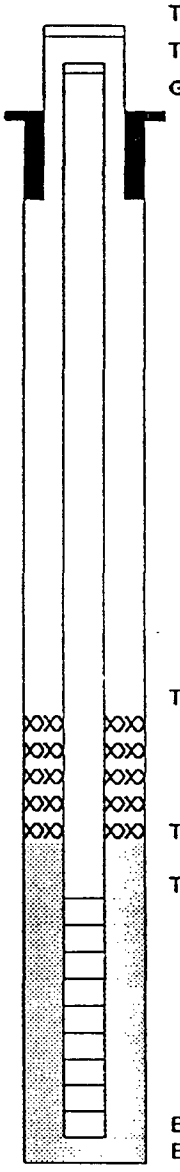
Elevation ____
Well Location S. EAST CORNER OF SITE
GWL Depth 14.75
Installed By K. PADILLA

Date/Time Started 1110 6/6/97
Date/Time Completed 1130 6/6/97

On-Site Geologist S. POPE
Personnel On-Site D. CHARLEY
Contractors On-Site —
Client Personnel On-Site —

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		—
Bottom of Protective Casing		—
Top of Permanent Borehole Casing		—
Bottom of Permanent Borehole Casing		—
Top of Concrete		—
Bottom of Concrete		—
Top of Grout		—
Bottom of Grout		—
Top of Well Riser		+.4
Bottom of Well Riser		9.6
Top of Well Screen		~~10.6~~ 9.6
Bottom of Well Screen		20
Top of Peltonite Seal		—
Bottom of Peltonite Seal		—
Top of Gravel Pack		—
Bottom of Gravel Pack		—
Top of Natural Cave-In		14
Bottom of Natural Cave-In		20
Top of Groundwater		14.75
Total Depth of Borehole		20



Top of Protective Casing —
Top of Riser +.4
Ground Surface —

Top of Seal —

Top of Gravel Pack —

Top of Screen 9.6

Bottom of Screen 20
Bottom of Borehole 20

Comments: 14.75 WL PRIOR TO SAMPLING @ 1210. SAMPLED @ 1215

Geologist Signature Steven T. Pope

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #
Well # TPW-06
Page of

Project Name HAMPTON 4M
Project Number 17877 Phase 6001
Project Location AZTEC, NM

Elevation
Borehole Location
GWL Depth 13.0 BGS
Logged By S. POPE
Drilled By R. PADILLA
Date/Time Started 1345 6/6/97
Date/Time Completed 1505 6/6/97

Well Logged By S. POPE
Personnel On-Site D. CHAVEZ
Contractors On-Site
Client Personnel On-Site

Drilling Method HSA 4¼" 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										
5	1	5 7	16"	BROWN SAND Med Grained, trace Clay, very hard some Cementation MOIST.			0	0	0	Refusal @ 16" 1357
10	2	10 12	15"	SAA		11.5	0	0	0	Refusal at 18"
15	3	15 17	16	GRAY SAND w/ Clay, Fine - Med Grained, Moist, Very Hard Brown - Reddish Brown SAND w/ Some Clay, Med. to SAND, HARD, Moist Wet		15.0 ▽	0	0	61	Refusal @ 14" Not Black Coloration in Bottom 4" of Soil Collected Sample No Free WATE
20	4	20 22	18	Grayish - Green Clay/Shale, Trace Fine SAND, Hard, Trace Moisture		20	0	0	0	Refusal @ 18"
25	5	25 27	10	SAP			0	0	0	Refusal @ 8" 1505
				TOB - 25						
30										
35										
40										

Comments: NO WATER Between 20-25 will Back fill to 20 w/ Hole plug Put screen in Pull up to 14 to see if water will accumulate. Put well in @ 1520 Full augers

Geologist Signature Scott T. Pope

MONITORING WELL INSTALLATION RECORD

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

Borehole # _____
Well # TPW06
Page ____ of ____

Project Name HAMPTON 4M
Project Number 17877 Phase 6001
Project Location _____

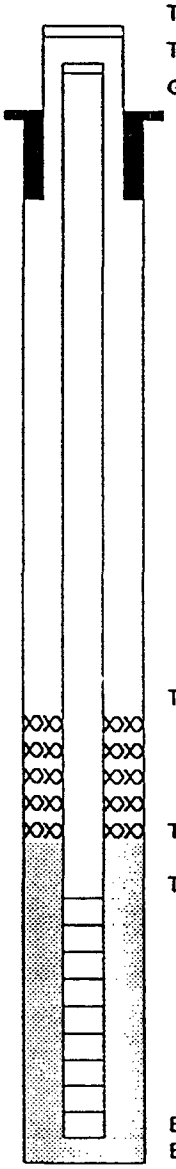
Elevation _____
Well Location _____
GWL Depth 15.0
Installed By K PADILLA

Date/Time Started 6/6/97 1505
Date/Time Completed 6/6/97 1525

On-Site Geologist S. DOSE
Personnel On-Site D. CHARLEY
Contractors On-Site —
Client Personnel On-Site —

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		—
Bottom of Protective Casing		—
Top of Permanent Borehole Casing		—
Bottom of Permanent Borehole Casing		—
Top of Concrete		—
Bottom of Concrete		—
Top of Grout		—
Bottom of Grout		—
Top of Well Riser		.4
Bottom of Well Riser		9.6
Top of Well Screen		9.6
Bottom of Well Screen		20
Top of Peltonite Seal		—
Bottom of Peltonite Seal		—
Top of Gravel Pack		—
Bottom of Gravel Pack		—
Top of Natural Cave-In		9.6
Bottom of Natural Cave-In		20
Top of Groundwater		15
Total Depth of Borehole		25



Top of Protective Casing —
Top of Riser .4
Ground Surface —

Top of Seal —

Top of Gravel Pack —

Top of Screen 9.4

Bottom of Screen 20
Bottom of Borehole 25

Comments: WL = 15.0 @ 1710 PRIOR TO SAMPLING. HOLE PLUGGED BOREHOLE TO 20 BEFORE INSTALLING SCREEN

Geologist Signature Scott T. Pope

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #
Well # TPW-07
Page of

Project Name Hampton 4M
Project Number 17877 Phase ~~HAA 6001~~
Project Location Aztec,

Elevation
Borehole Location TANK AREA
GWL Depth 15.0
Logged By S. POPE
Drilled By K. PADILLA
Date/Time Started 1540 6/6/97
Date/Time Completed 1620 6/6/97

Well Logged By S. POPE
Personnel On-Site D Chavez
Contractors On-Site
Client Personnel On-Site

Drilling Method HSA 4 1/4 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										
5	1	5 7	7"	BROWN SAND Med- Co Grained Very Hard, Trace MOISTURE. Some Cementation.			0	0	0	REFUSAL @ 7" 1553
10	2	10 12	12	SAA			0	0	0	REFUSAL @ 12"
15	3	15 17	12	SAA trace Sand, WET		▽ 15.0	0	13	948	REFUSAL @ 12" Head Space = 1175 PPM
20	4	20 22	14	GRAY SAND COARSE Grained, Trace Clay Very hard, Saturated		20	0	0	3	REFUSAL @ 12" 1620
25				Gray CLAY/Shale, Trace Fine Sand and SILT Very hard, Trace Moisture TOB - 20		21	0	0	0	will put well into 20 - 10 screen for WATER SAMPLE
30										
35										
40										

Comments: 10.90

Geologist Signature Scott T. Pope

MONITORING WELL INSTALLATION RECORD

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

Borehole # TPW-07
Well #
Page ____ of ____

Project Name HAMPTON 2M

Project Number 17877 Phase
Project Location AZTEC NM

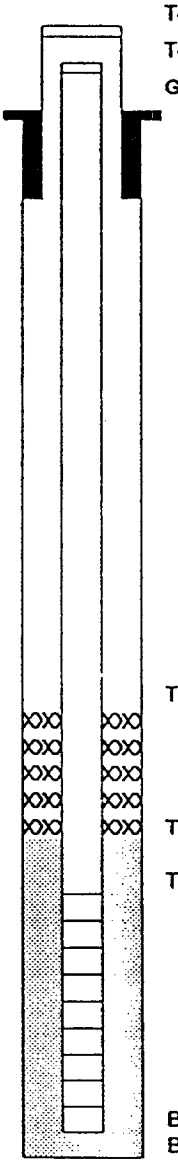
Elevation
Well Location TANK AREA
GWL Depth 14.6
Installed By K. PADILLA

Date/Time Started 1620 6/6/97
Date/Time Completed 1646 6/6/97

On-Site Geologist S. POPE
Personnel On-Site
Contractors On-Site
Client Personnel On-Site

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		—
Bottom of Protective Casing		—
Top of Permanent Borehole Casing		—
Bottom of Permanent Borehole Casing		—
Top of Concrete		—
Bottom of Concrete		—
Top of Grout		—
Bottom of Grout		—
Top of Well Riser		+.4
Bottom of Well Riser		9.6
Top of Well Screen		9.6
Bottom of Well Screen		20
Top of Peltonite Seal		—
Bottom of Peltonite Seal		—
Top of Gravel Pack		—
Bottom of Gravel Pack		—
Top of Natural Cave-In		9.6
Bottom of Natural Cave-In		20
Top of Groundwater		14.6
Total Depth of Borehole		20



Top of Protective Casing ____
Top of Riser ____
Ground Surface ____

Top of Seal —

Top of Gravel Pack —

Top of Screen 9.6

Bottom of Screen 20
Bottom of Borehole 20

Comments: WL prior TO SAMPLING 14.6 @ 1738

Geologist Signature Sean T. Pope