

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

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION FOR THE PURPOSE OF
CONSIDERING:**

CASE NO. 12033

**APPLICATION OF PUBLIC SERVICE COMPANY
OF NEW MEXICO FOR REVIEW OF OIL CONSERVATION
DIVISION DIRECTIVE DATED MARCH 13, 1998,
DIRECTING APPLICANT TO PERFORM ADDITIONAL
REMEDIAION FOR HYDROCARBON CONTAMINATION,
SAN JUAN COUNTY, NEW MEXICO.**

BURLINGTON RESOURCES'

SUBMITTAL OF WITNESSES'

PREPARED DIRECT TESTIMONY AND EXHIBITS

July 9, 1999

001052

BURLINGTON RESOURCES'
PREPARED DIRECT TESTIMONY

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SAN JUAN COUNTY, NEW MEXICO.**

VOLUME 1

PREPARED DIRECT TESTIMONY AND EXHIBITS

OF

LOUIS EDWARD HASELY

001054

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 **I. INTRODUCTION AND QUALIFICATIONS.**

2 **Q. STATE YOUR FULL NAME FOR THE RECORD.**

3 A. Louis Edward Hasely.

4 **Q. WHERE DO YOU RESIDE?**

5 A. Farmington, New Mexico.

6 **Q. BY WHOM ARE YOU EMPLOYED, AND IN WHAT CAPACITY?**

7 A. I am employed by Burlington Resources Oil & Gas Company as a Senior Staff
8 Environmental Representative.

9 **Q. WHAT ARE YOUR RESPONSIBILITIES AS SENIOR STAFF ENVIRONMENTAL**
10 **REPRESENTATIVE?**

11 As Senior Staff Environmental Representative, I am responsible for all environmental issues
12 related to Burlington's operations in the San Juan Basin including air permitting, spill
13 cleanup pit closures and ground water issues. There are two people in our Farmington office
14 with these environmental responsibilities. My area of responsibility includes the Burlington
15 Hampton 4M Well Site.

16 **Q. REVIEW YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.**

17 A. I graduated from Pennsylvania State University in 1982 with a degree in Petroleum and
18 Natural Gas Engineering. Following graduation, I went to work for Phillips Petroleum
19 Company in Casper, Wyoming, as a petroleum engineer with some responsibilities for
20 environmental matters since Phillips did not have in-house environmental staff. I moved to
21 Bartelsville Oklahoma in 1987 where my responsibilities included environmental and

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 A. At all times since the well was completed, production from the Hampton 4M Well has been
2 sold pursuant to a contract entitled "Gas Purchase Agreement between Southland Royalty
3 and Gas Company of New Mexico." Burlington Resources Oil and Gas Company is a
4 successor to Southland Royalty. Pursuant to this agreement, PNM purchased the natural gas
5 produced from the Hampton 4M Well. Burlington Exhibit No. 1 is a copy of this Gas
6 Purchase Agreement.

7 **Q. PLEASE DESCRIBE THE HAMPTON 4M WELL SITE.**

8 A. Burlington Exhibit No. 2 is a general diagram of the Hampton 4M Well site as it existed in
9 May 1998. The location of the Hampton 4M wellhead and Burlington's related production
10 equipment are identified on this diagram. Burlington's equipment is all situated to the south
11 of the wellhead. PNM Gas Services owned and operated two dehydrators with associated
12 equipment on the northern end of the location. Only one dehydrator is shown on this
13 diagram since the well was commingled in late 1997. Also indicated are the locations of the
14 former unlined surface pit operated by PNM and the former tank battery utilized by
15 Burlington and its predecessors. The areas excavated by Burlington and PNM prior to the
16 Division's March 13, 1998 letter which is the subject of this application are shown. The
17 locations of monitor wells ("MW") and temporary wells ("TPW") are also shown.

18
19 Burlington Exhibit No. 3 is a photograph of the well and associated equipment. It was taken
20 looking to the northwest and shows the site as it appeared in May 1998. The wellhead is in
21 the center of the pad. Burlington's equipment is to the south, or the left in this photograph.

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

PNM's dehydrator and meter house are shown to the north, or to the right in this photograph.

III. DISCOVERY OF CONTAMINATION AT HAMPTON 4M WELL SITE.

Q. WHEN DID YOU FIRST BECOME AWARE OF THE CONTAMINATION AT THE HAMPTON 4M WELL SITE?

A. I became aware of the problems at the Hampton 4M Well site during my first week with Burlington and I visited the well location during the first month of my employment. I have reviewed all of Burlington's records related to this well and the contamination at this well site. These records show that the Oil Conservation Division wrote Burlington concerning ground water impacts at this site in early 1997. Burlington Exhibit No. 4.

Q. GENERALLY SUMMARIZE BURLINGTON'S ACTIONS TO ADDRESS THE CONTAMINATION AT THE HAMPTON 4M WELL SITE.

A. After Burlington became aware of the contamination at the Hampton 4M Well site, we participated in the initial efforts to investigate and remediate the problem. These actions include removing contaminated soils under the production related pits on this location, trenching to collect hydrocarbons seeping from the northwestern edge of the well pad, participating in the continuing investigation of the contamination at this site and finally remediating the site pursuant to the directive of the Oil Conservation Division.

Q. WHEN WAS THE CONTAMINATION AT THE HAMPTON 4M WELL SITE DISCOVERED?

where on 3/27

also tank location

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 A. I have reviewed Burlington's records of the activities at the Hampton 4M Well site, and am
2 familiar with the courses of action taken by Burlington and PNM at the site. Burlington's
3 records reflect that in April 1996, PNM discovered contaminated groundwater at the
4 Hampton 4M gas production location under PNM's former dehydration pit, which is shown
5 on Burlington Exhibit No. 2. PNM excavated the site of the dehydration pit to a depth of
6 approximately 12 feet and then a soil boring revealed groundwater contamination.
7 Burlington Exhibit Nos. 7 and 14 are reports to the Division by Burlington and PNM which
8 review PNM's efforts to remediate this contamination.

9
10 Burlington Exhibit 7 reflects that, following additional investigation at the Hampton well site
11 in December 1996 and January 1997, representatives of PNM, Burlington and the Oil
12 Conservation Division met at the well on February 4, 1997 and again on April 16, 1997, to
13 discuss ground water contamination at the site.

14
15 Burlington Exhibit No. 4 demonstrates that Burlington was advised by the Oil Conservation
16 Division on April 8, 1997 that PNM had identified groundwater impacts on the southeast
17 corner of the Hampton 4M location related to Burlington's activities and directed Burlington
18 to address the cause and extent of the groundwater impact related to its activities at the
19 Hampton 4M location.

20 **Q. WAS ANY ADDITIONAL CONTAMINATION DISCOVERED AT THIS SITE IN**
21 **APRIL 1997?**

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 A. Yes. Burlington's records indicate that during a site visit on April 14, 1997, Burlington
2 discovered a surface seep of hydrocarbons to the north of the well pad and immediately
3 northwest of the former PNM surface disposal pit at its combination production unit. Free
4 phase hydrocarbons were seeping from the ground into a small drainage area.

5 **Q. HOW DID BURLINGTON RESPOND TO THE DISCOVERY OF THIS SEEP?**

6 A. Burlington notified the Oil Conservation Division and PNM of this contamination and on
7 April 16, 1997 hosted an on-site meeting with representatives of the Oil Conservation
8 Division and PNM.

9
10 At this meeting the Oil Conservation Division requested immediate action to contain this
11 contamination and Burlington agreed to construct a collection trench to slow or stop this
12 hydrocarbon seep.

13
14 An archeological clearance was obtained by Burlington and we constructed the trench on
15 April 17, 1997.

16
17 Burlington Exhibit No. 5 is a photograph looking east southeast which shows the well pad
18 for the Hampton 4M Well. Fenced off in orange is the area of the hydrocarbon seep
19 discovered on April 14, 1997. PNM's former dehydration equipment can be see on the well
20 pad above the site of the seep.
21

*15 Burlington
primarily fluids
from trench?*

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 Q. WHAT WAS BURLINGTON'S RESPONSE TO THE OIL CONSERVATION
2 DIVISION'S APRIL 8, 1997 LETTER?

3 On April 15, 1997, Burlington submitted to the Oil Conservation Division its Plan Of Action
4 for the Hampton 4M Production location. Burlington Exhibit No. 6 is a copy of this Plan of
5 Action. Burlington attempted to excavate the area of the former tank discharge pit on April
6 30, 1997 but encountered hard layers of sandstone one foot below the bottom of the former
7 production pit which could not be penetrated by the excavator. A Photo Ionization Detector
8 ("PID") survey revealed no signs that hydrocarbon contamination existed. Nine o ten test
9 holes were excavated, but no hydrocarbon contamination was found. Burlington Exhibit 7
10 is a letter dated July 30, 1997 reporting the results of this investigation to the Division.
11 Following extensive soil and ground water sampling, and meetings with Oil Conservation
12 Division representatives, and in compliance with Oil Conservation Division directive, on
13 September 19, 1997 Burlington filed a work plan with the Division which, among other
14 matters, proposed to remove sandstone in the southeast portion of the well site and continue
15 removal and screening of the layers of rock until a source area was located using a Photo
16 Ionization Detector. Burlington Exhibits 8, 9, and 10 are copies of this Work Plan and
17 related correspondence from the Division.

18
19 Between December 3 and December 6, 1997, Burlington undertook the removal of
20 contaminated soils from the area around Burlington's former tank batter. Burlington hired
21 Philip Services Corporation ("Philip Services") to perform the work during this period. I

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 supervised the remediation performed by Philip Services. Denver Bearden of PNM and Mr.
2 Denny G. Foust of the Oil Conservation Division were also present at different times during
3 the remediation.

4
5 During the remediation which I supervised between December 3 and December 6, 1997,
6 Philip Services excavated approximately 1000 cubic yards of soil. Contaminated soils were
7 first encountered, several feet below the surface. Initial PID readings were all in excess of
8 100 ppm. Around noon on 12/4/97, Mr. Foust asked that PID readings be taken. Those
9 readings indicated PID levels of 51 ppm on the west wall, 273 ppm on the north wall, 388
10 ppm on the east wall, and 195 ppm on the bottom of the excavation. The excavation work
11 resumed at that time. When the excavation reached an area of approximately 60 feet long
12 by 30 feet wide by 15 feet deep, additional PID readings were collected from the wells and
13 bottom. All readings were below 100 ppm and the excavation was stopped at that time.

14
15 On July 30, 1998, Burlington reported to the Division the results of the December 3-6, 1997
16 remediation. Burlington Exhibit No. 11 is a copy of Philip Services' January 28, 1998
17 Report for Work Performed at the Hampton 4M site.

18 **Q. DID BURLINGTON PARTICIPATE IN THE MONITORING OF THE**
19 **CONTAMINATION AT THIS WELL SITE?**

20 **A.** Yes. During the first six months of 1997, PNM drilled three permanent groundwater
21 monitoring wells on this location production unit and Burlington excavated 9 to 10 test holes

*Sample
Data
as
analysis?*

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 over the location. As stated earlier in this testimony, no hydrocarbons were found in any of
2 the test holes. An additional on-site meeting with PNM and the Oil Conservation Division
3 was hosted by Burlington on June 4, 1997, and the parties agreed to continue investigation
4 using a soil boring rig at this location. See Burlington Exhibit No. 7

5
6 There appeared to be two separate sources of groundwater contamination at the Hampton 4M
7 location. Burlington initiated an investigation using a hollow stem auger and split spoon
8 sampler to drill seven Temporary Wells at the location during June 1997. Soil samples were
9 collected every five feet and screened using a Photo Ionization Detector. To sample ground
10 water in the Temporary Wells, screened PVC pipe was installed in each well and once the
11 water level became static, a sample of water was taken and analyzed. Although soil screening
12 while drilling the Temporary Wells revealed no hydrocarbon contamination in the soil from
13 the surface to several feet above the groundwater zone, contamination to some degree was
14 found in each ground water sample from the Temporary Wells. See Burlington Exhibit No.
15 7

16
17 The results of this work were reported to the Oil Conservation Division on July 30, 1997.
18 On August 27, 1997, the Division wrote Burlington and PNM and required a work plan be
19 submitted to the Oil Conservation Division identify specific additional actions to be taken to
20 address this contamination. Burlington Exhibit No. 8.

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1 Burlington's Soil and Groundwater Investigation Work Plan was submitted to the Division
2 on September 19, 1997. Burlington Exhibit No. 9. Since previous work at this site had
3 provided insight into the eastern and western extent of ground water impact, Burlington's
4 work plan outlined additional monitoring necessary to define the downgradient and upgradient
5 extent of contamination. The plan also outlined how Burlington would remove sandstone in
6 the southeast portion of the site to investigate and remove any possible source material. On
7 November 24, 1997, the Oil Conservation Division approved the work plan subject to certain
8 conditions and, as previously discussed. Burlington Exhibit No. 10. Burlington commenced
9 excavation on December 3, 1997 in the southeast portion of the site.

10 **Q. FOLLOWING THE REMEDIATION AT THE LOCATION OF THE FORMER**
11 **TANK BATTERY, WHAT ACTION DID BURLINGTON TAKE TO INVESTIGATE**
12 **AND REMEDIATE CONTAMINATION AT THIS PRODUCTION UNIT?**

13 A. Burlington reported the results of its work at the Hampton 4M to the Oil Conservation
14 Division on January 30, 1998. On April 7, 1998, the Division advised Burlington that the
15 remedial actions taken were satisfactory, but required that two additional monitor wells be
16 installed, that additional monitoring be conducted, and that the results of that monitoring be
17 reported to the Division. (Burlington Exhibits 12 and 15)

18 **Q. HAS BURLINGTON COMPLIED WITH THIS DIRECTIVE FROM THE OIL**
19 **CONSERVATION DIVISION?**

20 A. Burlington installed monitor wells at the locations of the former Temporary bore holes TWP-1
21 and TWP-2 on May 11, 1998, and has sampled and analyzed water from these wells as

Handwritten notes:
Hampton
4M
monitor
wells
at
TWP-1
TWP-2

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 directed by the Division. The wells were called the MW-9 and the MW-10.

2
3 **IV. MARCH 13, 1998 OIL CONSERVATION DIVISION DIRECTIVE TO PNM FOR**
4 **ADDITIONAL INVESTIGATION AND REMEDIATION.**

5
6 **Q. WHEN DID BURLINGTON BECOME AWARE OF THE DIVISION'S MARCH 13,**
7 **1998 DIRECTIVE TO PNM FOR ADDITIONAL INVESTIGATION AND**
8 **REMEDICATION AT THE HAMPTON 4M WELL SITE?**

9 A. On March 13, 1998 the Oil Conservation Division wrote PNM, and directed that PNM
10 conduct, within 30 days, additional remedial actions at the Hampton 4M Well site to remove
11 remaining source areas with free phase hydrocarbons in the vicinity and immediately
12 downgradient of PNM's former dehydration pit. Burlington Exhibit No. 13.

13 **Q. WHAT NEW ACTIONS HAS PNM UNDERTAKEN IN RESPONSE TO THE**
14 **DIVISION'S MARCH 13, 1998 DIRECTIVE?**

15 A. PNM undertook no new actions in response to the Division's March 13, 1998 directive.
16 Instead, it only continued to conduct quarterly ground water sampling and water level
17 measurements at this site and operated a free product recovery pump in monitor well MW-6.
18 *See Burlington Exhibit No. 16.*

19
20 PNM wrote the Division concerning contamination at this site on March 31, 1998. In this
21 letter PNM summarized its activities at this site, challenged the effectiveness of the remedial

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1 actions taken by Burlington at this well site, and presented various arguments as to why it was
2 not responsible for contamination at this well site. Burlington Exhibit No. 14.

3
4 **Q. WHAT HAS BURLINGTON DONE SINCE MARCH 13, 1998 TO FURTHER**
5 **INVESTIGATE AND REMEDIATE THE CONTAMINATION AT THIS WELL**
6 **SITE?**

7 A. The Division wrote Burlington On April 7, 1998, and requested the installation of two
8 monitor wells to acquire additional data to help determine the source of the free phase
9 contamination at this production unit as previously discussed. These wells were installed on
10 May 11, 1998 and on May 30, 1998, Burlington filed with the Division a status report and
11 plan of action on the groundwater contamination at the Hampton 4M Well site.

12
13 On September 1, 1998, the Oil Conservation Division wrote Burlington and PNM. The
14 Division stated that due to the potential for contamination of downgradient private water
15 wells, both PNM and Burlington were required to conduct additional investigations to
16 determine the complete downgradient extent of ground water contamination at the site.
17 Burlington was also required to submit a remediation and monitoring plan for ground water
18 contamination at this site.

19
20 In response to the Division's September 1, 1998 letter, Burlington set up a meeting with PNM
21 on September 17, 1998. However, no agreement was reached for additional investigation and

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 remediation. Although the parties agreed that an additional monitor well should be drilled
2 downgradient of the furthest down gradient well from the Hampton 4M site, PNM was
3 unwilling to contribute to the costs of this activity. Burlington therefore proceeded with the
4 downgradient well installation of well MW-11. PNM did not participate in the installation
5 other than to send a witness to monitor Burlington's work.

6 **Q. WHAT HAS BURLINGTON DONE TO REMOVE THE SOURCE OF**
7 **CONTAMINATION AT THE HAMPTON 4M WELL SITE SINCE THE DRILLING**
8 **OF THE LAST DOWN GRADIENT MONITOR WELL?**

9 A. Burlington determined that no effort to clean up the Hampton 4M Well site could be effective
10 until the area surrounding the old PNM unlined dehydrator pit was remediated. Therefore,
11 by letter dated October 26, 1998, Burlington advised PNM that "the delays by PNM in
12 remediation of contamination caused by PNM's discharge of hydrocarbons from its dehydrator
13 can no longer be tolerated" and demanded that PNM "immediately undertake the remediation
14 of the contamination at the Hampton 4M Well." Burlington also advised PNM that if they did
15 not undertake the remediation by October 30, 1998, Burlington would "promptly remediate
16 the contamination resulting from PNM's operation of its dehydrator at the Hampton 4M Well
17 site." Burlington Exhibit No. 19 is a copy of its October 26, 1998 letter to PNM.

18 **Q. WHAT RESPONSE DID BURLINGTON RECEIVE FROM PNM TO**
19 **BURLINGTON'S DEMAND FOR REMEDIATION?**

20 A. PNM responded to Burlington on October 28, 1998 denying that the contamination at the
21 Hampton 4M Well site was the result of any past or present operations by PNM and declined

*concern about
continued migration
of contamination
down points
up gradient?*

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 to undertake or participate in any remediation. PNM merely stated that it would "...encourage
2 Burlington to immediately proceed with remediation of the contamination..." Burlington
3 Exhibit No. 20.

4
5 **Q. DID PNM REMEDIATE THE SITE?**

6 A. No.

7 **Q. DID PNM CONTACT THE OIL CONSERVATION DIVISION?**

8 A. On November 4, 1998, PNM wrote the Oil Conservation Division and objected to the
9 remediation proposed by Burlington for various reasons including PNM's concern that
10 Burlington's remediation would interrupt PNM's ongoing remediation and monitoring
11 activities at the Hampton 4M site and would obliterate evidence concerning the release point
12 of contamination at the site. Burlington Exhibit No. 22.

13 **Q. HOW DID BURLINGTON KEEP THE OIL CONSERVATION DIVISION**
14 **APPRIZED OF ITS ACTIVITIES AT THE HAMPTON 4M WELL SITE?**

15 A. On October 28, 1998, Burlington wrote to the Oil Conservation Division's Environmental
16 Bureau and advised that data acquired from two recent soil borings confirmed that a
17 substantial amount of soil contamination remained in place in the area of PNM's operations,
18 and to a lesser extent near the previously remediated Burlington pit. Burlington stated that
19 it believed that no effort to clean up the groundwater at this site will be effective until the area
20 surrounding the old unlined dehydrator pit was remediated. Burlington also advised the
21 Division that if PNM had not agreed to undertake remediation of this site by October 30,

SP-1
SP-2

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 1998, Burlington was prepared to immediately remediate the contamination on the entire
2 location. Burlington then provided the details on the remediation and monitoring work it
3 proposed to undertake at the Hampton 4M location. Burlington Exhibit No. 21.

4
5 On November 6, 1998, PNM wrote Burlington and expressed its objections to the proposed
6 remediation and asked Burlington to refrain from implementing its proposed remediation.
7 Burlington Exhibit No. 23. Burlington responded that it would proceed with its proposed
8 remediation unless otherwise directed by the Oil Conservation Division. Burlington Exhibit
9 No. 25. PNM also advised the Division that it would file a groundwater closure report on
10 PNM's former pit. Burlington Exhibit No. 24.

11
12 **V. 1999 REMEDIATION AT HAMPTON 4M WELL SITE**

13 **Q. HAS BURLINGTON REMEDIATED THE HAMPTON 4M WELL SITE?**

14 A. Burlington excavated the apparent source material at this site during the winter of 1998-1999.

15
16 **Q. HOW WAS THIS REMEDIATION MONITORED?**

17 A. I supervised the remediation of this site and our activities were witnessed at various times by
18 representatives of the Oil Conservation Division and PNM. I also contacted Philip Services
19 Corporation to take soil readings and monitor the progress.

20 **Q. DESCRIBE WHAT BURLINGTON DID TO REMEDIATE THE CONTAMINATION**
21 **AT THE HAMPTON 4M WELL SITE.**

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 A. From November 10, 1998 through February 2, 1999, I supervised the remediation of
2 contaminated soils at the Hampton 4M Well site. As with the December 3-6, 1997
3 remediation, Burlington employed Philip Services Corporation to excavate and remediate
4 hydrocarbon impacted soils.

5
6 Under my supervision, excavation began in the in the northern portion of the production unit
7 in the area of PNM's former dehydration pit. Ron Dedrick, Maureen Gannon and Mark
8 Sikelianos from PNM were present during part of the excavation, as were Denny Foust and
9 Bruce Martin from the Division, and Robert Foley from Williams Field Services.

10
11 Prior work at the site revealed that a dozer was necessary to break up the rock. The
12 overburden was removed and stockpiled, and is depicted in Burlington Exhibit No. 26, which
13 is a photograph which shows the removal of the overburden at the Hampton 4M Well site on
14 November 10, 1998.

15
16 During the excavation, as Philip Services excavated the area where PNM's former unlined
17 dehydration pit was located, and where PNM had previously excavated to twelve feet, we only
18 encountered traces of hydrocarbon-impacted soil from approximately six feet below ground
19 surface to approximately twelve feet below the ground surface. As the excavation proceeded
20 beyond twelve feet below the ground surface, which was the depth at which PNM stopped its
21 previous excavation, Philip Services began encountering heavier amounts of

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 hydrocarbon-impacted soil. Burlington Exhibit No. 27 is a photograph of hydrocarbon
2 staining at 12 to 13 feet below the ground surface in the vicinity of the former PNM
3 dehydration pit. It shows black hydrocarbon contamination at the location of the former PNM
4 dehydration pit. Under my supervision throughout the excavation process, soil samples were
5 collected from the excavation, and from a natural seep northwest of the well pad. At my
6 direction, Philip Services performed heated headspace analysis on all of those samples. The
7 locations of the analyses and the results thereof are shown on Philip's "Report for Work
8 Performed at the Hampton #4M Well Site" dated March 3, 1999, which is attached to this
9 testimony as Burlington Exhibit No. 28.

10
11 This excavation proceeded under my supervision to approximately 27 feet below the ground
12 surface, with water encountered at approximately 25 feet. Burlington Exhibit No. 29 is a
13 photograph of the excavation at a depth of 26 feet on November 13, 1998.

14
15 At my direction, clean overburden was brought in and used to construct three cells in the
16 bottom of the excavation. We stopped excavation activities until November 30, 1998, so that
17 we could observe ground water entering the different areas of the excavation and proceeding
18 through the cells. During the period that excavation activities were stopped, we checked the
19 cells periodically, and at my direction Dawn Trucking of Farmington pumped the accumulated
20 water out using a vacuum truck and hauled the water to Burlington's McGrath disposal pit.
21 My observation of the cells indicated that there were free phase hydrocarbons on the surface

PREPARED DIRECT TESTIMONY OF LOUIS EDWARD HASELY

1 of the water in the eastern cell. The other two cells revealed little to no free phase
2 hydrocarbons. Burlington Exhibits 30, 31 and 32 are photographs of these cells showing
3 hydrocarbon on the surface of the eastern cell.

4
5 On November 30, 1998, at my direction and under my supervision, excavation of the
6 Hampton 4M Well site was resumed by Philip Services. Philip Services completed the
7 excavation of the impacted soils in the northern, western, and eastern walls, which were the
8 areas underlying and downgradient of PNM's former unlined dehydration pit.

9
10 At my direction, the project was temporarily shut down while we pursued approval to
11 landfarm on a nearby location contaminated soils from the Hampton 4M Well site. At this
12 point, the excavation had removed impacted soils from the area surrounding and
13 downgradient of PNM's former unlined pit, and from the northern wall of Burlington's former
14 pit that we had previously excavated in December 1997. Contaminated soils found in the
15 northeast part of the old excavation at the water level were removed until PID readings
16 indicated the remaining soils were clean.

*verified by
lab analyses?*

17
18 From January 21, 1999 until February 2, 1999, at my direction, Philip Services continued
19 removing impacted soils. At this point, I directed that Philip Services follow what appeared
20 to be a plume of impacted soils from the area underlying PNM's former unlined dehydration
21 pit south toward the pit which Burlington had excavated in December, 1997. The impacted

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1 soils ended near monitor well MW-4. There was no connection of impacted soils from
2 Burlington's old excavation in the south to the impacted soil that was being excavated in the
3 north. I also directed Philip Services to strip out a section of the Hampton 4M Well Site
4 between the wellhead and the former excavation, in the area immediately north of where the
5 plume from PNM's former unlined pit ended. We found no contamination in this stripped out
6 section. Based on my observations, the contamination was not caused by any sources from
7 the well bore.

*pressure
tests ?*

8
9 During the 1998-99 excavation at the Hampton 4M Well site, Burlington removed
10 approximately 6,440 cubic yards of soil. Contaminated soils are being land farmed at this
11 time and Burlington has rebuilt the location and installed a monitoring well (MW-13) in the
12 vicinity of the old monitor well MW-4.

13 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

14 **A. Yes.**

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13 cleanup pit closures and ground water issues. There are two people in our Farmington office
14 with these environmental responsibilities. My area of responsibility includes the Burlington
15 Hampton 4M Well Site.

16 **Q. REVIEW YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.**

17 A. I graduated from Pennsylvania State University in 1982 with a degree in Petroleum and
18 Natural Gas Engineering. Following graduation, I went to work for Phillips Petroleum
19 Company in Casper, Wyoming, as a petroleum engineer with some responsibilities for
20 environmental matters since Phillips did not have in-house environmental staff. I moved to
21 Bartelsville Oklahoma in 1987 where my responsibilities included environmental and

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1 regulatory matters. In 1988, I moved back to Casper with full environmental and regulatory
2 responsibility for Phillips Petroleum Company operations in a six state region. In 1991, I
3 moved to Farmington and handled Phillips' environmental and regulatory affairs. I was
4 moved to Louisiana in 1996 and in August 1997 resigned from Phillips to return to
5 Farmington to work for Burlington. I have worked as an engineer with responsibilities for
6 environmental-contamination issues at all times since receiving my degree from Penn State
7 in 1982.

8 **Q. WHO WAS YOUR PREDECESSOR IN THIS JOB?**

9 A. My predecessor in this position was Keith Boedecker. When first employed by Burlington,
10 I worked with another Environmental Representative, Craig Bock. Mr. Bock was transferred
11 to Burlington's Houston office about four months after I started.

12 **Q. ARE YOU RESPONSIBLE FOR BURLINGTON'S ACTIVITIES AT THE**
13 **HAMPTON 4M WELL SITE?**

14 A. I first worked with Mr. Bock during our four month overlap, but since his transfer in
15 December 1997, I have been the Environmental Representative who has been responsible for
16 Burlington's activities at the Hampton 4M Well site to address the contamination at this
17 location.

18 **Q. EXPLAIN YOUR SPECIFIC RESPONSIBILITIES AS THEY RELATE TO THE**
19 **HAMPTON 4M WELL SITE.**

20 A. My responsibilities include the technical monitoring and remediation efforts at this well site.
21 I prepare all work plans and reports to the appropriate agencies, manage excavation and

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1 sampling contractors, and provide technical direction to field crews.

2 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

3 A. The purpose of my testimony is to (1) review for the Commission the activities undertaken
4 by Burlington in response to the contamination at the Hampton 4M Well site, (2) to show
5 that Burlington has fully responded to all Oil Conservation Division directives concerning
6 this contamination, and (3) to refute PNM's suggestion that Burlington has not undertaken
7 appropriate actions to remediate the contamination at this site.

8 **Q. WHAT DOES BURLINGTON SEEK IN THIS CASE?**

9 A. Burlington seeks a ruling by the Oil Conservation Commission denying the application of
10 Public Service Company of New Mexico (PNM) in this case and declaring that PNM is a
11 responsible person for the contamination at the Hampton 4M Well site.

12 **Q. WHAT DOES BURLINGTON CONTEND IN THIS CASE?**

13 A. Burlington is a responsible person for contamination at this well site. PNM is also a
14 responsible person for contamination at this site.

15
16 **II. THE HAMPTON 4M WELL.**

17 **Q. WHEN AND WHERE WAS THE HAMPTON 4M DRILLED?**

18 A. Well records indicate that this well was spudded by Southland Royalty Company on
19 November 22, 1983 and completed in March 1984. The well is located at the upper end of
20 a draw approximately 3 miles east of Aztec, New Mexico.

21 **Q. HOW IS THE PRODUCTION FROM THIS WELL SOLD?**

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1 A. At all times since the well was completed, production from the Hampton 4M Well has been
2 sold pursuant to a contract entitled "Gas Purchase Agreement between Southland Royalty
3 and Gas Company of New Mexico." Burlington Resources Oil and Gas Company is a
4 successor to Southland Royalty. Pursuant to this agreement, PNM purchased the natural gas
5 produced from the Hampton 4M Well. Burlington Exhibit No. 1 is a copy of this Gas
6 Purchase Agreement.

7 **Q. PLEASE DESCRIBE THE HAMPTON 4M WELL SITE.**

8 A. Burlington Exhibit No. 2 is a general diagram of the Hampton 4M Well site as it existed in
9 May 1998. The location of the Hampton 4M wellhead and Burlington's related production
10 equipment are identified on this diagram. Burlington's equipment is all situated to the south
11 of the wellhead. PNM Gas Services owned and operated two dehydrators with associated
12 equipment on the northern end of the location. Only one dehydrator is shown on this
13 diagram since the well was commingled in late 1997. Also indicated are the locations of the
14 former unlined surface pit operated by PNM and the former tank battery utilized by
15 Burlington and its predecessors. The areas excavated by Burlington and PNM prior to the
16 Division's March 13, 1998 letter which is the subject of this application are shown. The
17 locations of monitor wells ("MW") and temporary wells ("TPW") are also shown.

18
19 Burlington Exhibit No. 3 is a photograph of the well and associated equipment. It was taken
20 looking to the northwest and shows the site as it appeared in May 1998. The wellhead is in
21 the center of the pad. Burlington's equipment is to the south, or the left in this photograph.

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1 PNM's dehydrator and meter house are shown to the north, or to the right in this photograph.

2
3 **III. DISCOVERY OF CONTAMINATION AT HAMPTON 4M WELL SITE.**

4 **Q. WHEN DID YOU FIRST BECOME AWARE OF THE CONTAMINATION AT THE**
5 **HAMPTON 4M WELL SITE?**

6 A. I became aware of the problems at the Hampton 4M Well site during my first week with
7 Burlington and I visited the well location during the first month of my employment. I have
8 reviewed all of Burlington's records related to this well and the contamination at this well
9 site. These records show that the Oil Conservation Division wrote Burlington concerning
10 ground water impacts at this site in early 1997. Burlington Exhibit No. 4.

11 **Q. GENERALLY SUMMARIZE BURLINGTON'S ACTIONS TO ADDRESS THE**
12 **CONTAMINATION AT THE HAMPTON 4M WELL SITE.**

13 A. After Burlington became aware of the contamination at the Hampton 4M Well site, we
14 participated in the initial efforts to investigate and remediate the problem. These actions
15 include removing contaminated soils under the production related pits on this location,
16 trenching to collect hydrocarbons seeping from the northwestern edge of the well pad,
17 participating in the continuing investigation of the contamination at this site and finally
18 remediating the site pursuant to the directive of the Oil Conservation Division.

19 **Q. WHEN WAS THE CONTAMINATION AT THE HAMPTON 4M WELL SITE**
20 **DISCOVERED?**

21
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1 A. I have reviewed Burlington's records of the activities at the Hampton 4M Well site, and am
2 familiar with the courses of action taken by Burlington and PNM at the site. Burlington's
3 records reflect that in April 1996, PNM discovered contaminated groundwater at the
4 Hampton 4M gas production location under PNM's former dehydration pit, which is shown
5 on Burlington Exhibit No. 2. PNM excavated the site of the dehydration pit to a depth of
6 approximately 12 feet and then a soil boring revealed groundwater contamination.
7 Burlington Exhibit Nos. 7 and 14 are reports to the Division by Burlington and PNM which
8 review PNM's efforts to remediate this contamination.

9
10 Burlington Exhibit 7 reflects that, following additional investigation at the Hampton well site
11 in December 1996 and January 1997, representatives of PNM, Burlington and the Oil
12 Conservation Division met at the well on February 4, 1997 and again on April 16, 1997, to
13 discuss ground water contamination at the site.

14
15 Burlington Exhibit No. 4 demonstrates that Burlington was advised by the Oil Conservation
16 Division on April 8, 1997 that PNM had identified groundwater impacts on the southeast
17 corner of the Hampton 4M location related to Burlington's activities and directed Burlington
18 to address the cause and extent of the groundwater impact related to its activities at the
19 Hampton 4M location.

20 **Q. WAS ANY ADDITIONAL CONTAMINATION DISCOVERED AT THIS SITE IN**
21 **APRIL 1997?**

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1 A. Yes. Burlington's records indicate that during a site visit on April 14, 1997, Burlington
2 discovered a surface seep of hydrocarbons to the north of the well pad and immediately
3 northwest of the former PNM surface disposal pit at its combination production unit. Free
4 phase hydrocarbons were seeping from the ground into a small drainage area.

5 **Q. HOW DID BURLINGTON RESPOND TO THE DISCOVERY OF THIS SEEP?**

6 A. Burlington notified the Oil Conservation Division and PNM of this contamination and on
7 April 16, 1997 hosted an on-site meeting with representatives of the Oil Conservation
8 Division and PNM.

9
10 At this meeting the Oil Conservation Division requested immediate action to contain this
11 contamination and Burlington agreed to construct a collection trench to slow or stop this
12 hydrocarbon seep.

13
14 An archeological clearance was obtained by Burlington and we constructed the trench on
15 April 17, 1997.

16
17 Burlington Exhibit No. 5 is a photograph looking east southeast which shows the well pad
18 for the Hampton 4M Well. Fenced off in orange is the area of the hydrocarbon seep
19 discovered on April 14, 1997. PNM's former dehydration equipment can be see on the well
20 pad above the site of the seep.

21

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1 Q. **WHAT WAS BURLINGTON'S RESPONSE TO THE OIL CONSERVATION**
2 **DIVISION'S APRIL 8, 1997 LETTER?**

3 On April 15, 1997, Burlington submitted to the Oil Conservation Division its Plan Of Action
4 for the Hampton 4M Production location. Burlington Exhibit No. 6 is a copy of this Plan of
5 Action. Burlington attempted to excavate the area of the former tank discharge pit on April
6 30, 1997 but encountered hard layers of sandstone one foot below the bottom of the former
7 production pit which could not be penetrated by the excavator. A Photo Ionization Detector
8 ("PID") survey revealed no signs that hydrocarbon contamination existed. Nine o ten test
9 holes were excavated, but no hydrocarbon contamination was found. Burlington Exhibit 7
10 is a letter dated July 30, 1997 reporting the results of this investigation to the Division.
11 Following extensive soil and ground water sampling, and meetings with Oil Conservation
12 Division representatives, and in compliance with Oil Conservation Division directive, on
13 September 19, 1997 Burlington filed a work plan with the Division which, among other
14 matters, proposed to remove sandstone in the southeast portion of the well site and continue
15 removal and screening of the layers of rock until a source area was located using a Photo
16 Ionization Detector. Burlington Exhibits 8, 9, and 10 are copies of this Work Plan and
17 related correspondence from the Division.

18
19 Between December 3 and December 6, 1997, Burlington undertook the removal of
20 contaminated soils from the area around Burlington's former tank batter. Burlington hired
21 Philip Services Corporation ("Philip Services") to perform the work during this period. I

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1 supervised the remediation performed by Philip Services. Denver Bearden of PNM and Mr.
2 Denny G. Foust of the Oil Conservation Division were also present at different times during
3 the remediation.

4
5 During the remediation which I supervised between December 3 and December 6, 1997,
6 Philip Services excavated approximately 1000 cubic yards of soil. Contaminated soils were
7 first encountered, several feet below the surface. Initial PID readings were all in excess of
8 100 ppm. Around noon on 12/4/97, Mr. Foust asked that PID readings be taken. Those
9 readings indicated PID levels of 51 ppm on the west wall, 273 ppm on the north wall, 388
10 ppm on the east wall, and 195 ppm on the bottom of the excavation. The excavation work
11 resumed at that time. When the excavation reached an area of approximately 60 feet long
12 by 30 feet wide by 15 feet deep, additional PID readings were collected from the wells and
13 bottom. All readings were below 100 ppm and the excavation was stopped at that time.

14
15 On July 30, 1998, Burlington reported to the Division the results of the December 3-6, 1997
16 remediation. Burlington Exhibit No. 11 is a copy of Philip Services' January 28, 1998
17 Report for Work Performed at the Hampton 4M site.

18 **Q. DID BURLINGTON PARTICIPATE IN THE MONITORING OF THE**
19 **CONTAMINATION AT THIS WELL SITE?**

20 **A.** Yes. During the first six months of 1997, PNM drilled three permanent groundwater
21 monitoring wells on this location production unit and Burlington excavated 9 to 10 test holes

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1 over the location. As stated earlier in this testimony, no hydrocarbons were found in any of
2 the test holes. An additional on-site meeting with PNM and the Oil Conservation Division
3 was hosted by Burlington on June 4, 1997, and the parties agreed to continue investigation
4 using a soil boring rig at this location. See Burlington Exhibit No. 7

5
6 There appeared to be two separate sources of groundwater contamination at the Hampton 4M
7 location. Burlington initiated an investigation using a hollow stem auger and split spoon
8 sampler to drill seven Temporary Wells at the location during June 1997. Soil samples were
9 collected every five feet and screened using a Photo Ionization Detector. To sample ground
10 water in the Temporary Wells, screened PVC pipe was installed in each well and once the
11 water level became static, a sample of water was taken and analyzed. Although soil screening
12 while drilling the Temporary Wells revealed no hydrocarbon contamination in the soil from
13 the surface to several feet above the groundwater zone, contamination to some degree was
14 found in each ground water sample from the Temporary Wells. See Burlington Exhibit No.
15 7

16
17 The results of this work were reported to the Oil Conservation Division on July 30, 1997.
18 On August 27, 1997, the Division wrote Burlington and PNM and required a work plan be
19 submitted to the Oil Conservation Division identify specific additional actions to be taken to
20 address this contamination. Burlington Exhibit No. 8.

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1 Burlington's Soil and Groundwater Investigation Work Plan was submitted to the Division
2 on September 19, 1997. Burlington Exhibit No. 9. Since previous work at this site had
3 provided insight into the eastern and western extent of ground water impact, Burlington's
4 work plan outlined additional monitoring necessary to define the downgradient and upgradient
5 extent of contamination. The plan also outlined how Burlington would remove sandstone in
6 the southeast portion of the site to investigate and remove any possible source material. On
7 November 24, 1997, the Oil Conservation Division approved the work plan subject to certain
8 conditions and, as previously discussed. Burlington Exhibit No. 10. Burlington commenced
9 excavation on December 3, 1997 in the southeast portion of the site.

10 **Q. FOLLOWING THE REMEDIATION AT THE LOCATION OF THE FORMER**
11 **TANK BATTERY, WHAT ACTION DID BURLINGTON TAKE TO INVESTIGATE**
12 **AND REMEDIATE CONTAMINATION AT THIS PRODUCTION UNIT?**

13 A. Burlington reported the results of its work at the Hampton 4M to the Oil Conservation
14 Division on January 30, 1998. On April 7, 1998, the Division advised Burlington that the
15 remedial actions taken were satisfactory, but required that two additional monitor wells be
16 installed, that additional monitoring be conducted, and that the results of that monitoring be
17 reported to the Division. (Burlington Exhibits 12 and 15)

18 **Q. HAS BURLINGTON COMPLIED WITH THIS DIRECTIVE FROM THE OIL**
19 **CONSERVATION DIVISION?**

20 A. Burlington installed monitor wells at the locations of the former Temporary bore holes TWP-1
21 and TWP-2 on May 11, 1998, and has sampled and analyzed water from these wells as

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1 directed by the Division. The wells were called the MW-9 and the MW-10.

2
3 **IV. MARCH 13, 1998 OIL CONSERVATION DIVISION DIRECTIVE TO PNM FOR**
4 **ADDITIONAL INVESTIGATION AND REMEDIATION.**

5
6 **Q. WHEN DID BURLINGTON BECOME AWARE OF THE DIVISION'S MARCH 13,**
7 **1998 DIRECTIVE TO PNM FOR ADDITIONAL INVESTIGATION AND**
8 **REMEDICATION AT THE HAMPTON 4M WELL SITE?**

9 **A.** On March 13, 1998 the Oil Conservation Division wrote PNM, and directed that PNM
10 conduct, within 30 days, additional remedial actions at the Hampton 4M Well site to remove
11 remaining source areas with free phase hydrocarbons in the vicinity and immediately
12 downgradient of PNM's former dehydration pit. Burlington Exhibit No. 13.

13 **Q. WHAT NEW ACTIONS HAS PNM UNDERTAKEN IN RESPONSE TO THE**
14 **DIVISION'S MARCH 13, 1998 DIRECTIVE?**

15 **A.** PNM undertook no new actions in response to the Division's March 13, 1998 directive.
16 Instead, it only continued to conduct quarterly ground water sampling and water level
17 measurements at this site and operated a free product recovery pump in monitor well MW-6.
18 *See Burlington Exhibit No. 16.*

19
20 PNM wrote the Division concerning contamination at this site on March 31, 1998. In this
21 letter PNM summarized its activities at this site, challenged the effectiveness of the remedial

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1 actions taken by Burlington at this well site, and presented various arguments as to why it was
2 not responsible for contamination at this well site. Burlington Exhibit No. 14.
3

4 **Q. WHAT HAS BURLINGTON DONE SINCE MARCH 13, 1998 TO FURTHER**
5 **INVESTIGATE AND REMEDIATE THE CONTAMINATION AT THIS WELL**
6 **SITE?**

7 A. The Division wrote Burlington On April 7, 1998, and requested the installation of two
8 monitor wells to acquire additional data to help determine the source of the free phase
9 contamination at this production unit as previously discussed. These wells were installed on
10 May 11, 1998 and on May 30, 1998, Burlington filed with the Division a status report and
11 plan of action on the groundwater contamination at the Hampton 4M Well site.
12

13 On September 1, 1998, the Oil Conservation Division wrote Burlington and PNM. The
14 Division stated that due to the potential for contamination of downgradient private water
15 wells, both PNM and Burlington were required to conduct additional investigations to
16 determine the complete downgradient extent of ground water contamination at the site.
17 Burlington was also required to submit a remediation and monitoring plan for ground water
18 contamination at this site.
19

20 In response to the Division's September 1, 1998 letter, Burlington set up a meeting with PNM
21 on September 17, 1998. However, no agreement was reached for additional investigation and

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1 remediation. Although the parties agreed that an additional monitor well should be drilled
2 downgradient of the furthest down gradient well from the Hampton 4M site, PNM was
3 unwilling to contribute to the costs of this activity. Burlington therefore proceeded with the
4 downgradient well installation of well MW-11. PNM did not participate in the installation
5 other than to send a witness to monitor Burlington's work.

6 **Q. WHAT HAS BURLINGTON DONE TO REMOVE THE SOURCE OF**
7 **CONTAMINATION AT THE HAMPTON 4M WELL SITE SINCE THE DRILLING**
8 **OF THE LAST DOWN GRADIENT MONITOR WELL?**

9 A. Burlington determined that no effort to clean up the Hampton 4M Well site could be effective
10 until the area surrounding the old PNM unlined dehydrator pit was remediated. Therefore,
11 by letter dated October 26, 1998, Burlington advised PNM that "the delays by PNM in
12 remediation of contamination caused by PNM's discharge of hydrocarbons from its dehydrator
13 can no longer be tolerated" and demanded that PNM "immediately undertake the remediation
14 of the contamination at the Hampton 4M Well." Burlington also advised PNM that if they did
15 not undertake the remediation by October 30, 1998, Burlington would "promptly remediate
16 the contamination resulting from PNM's operation of its dehydrator at the Hampton 4M Well
17 site." Burlington Exhibit No. 19 is a copy of its October 26, 1998 letter to PNM.

18 **Q. WHAT RESPONSE DID BURLINGTON RECEIVE FROM PNM TO**
19 **BURLINGTON'S DEMAND FOR REMEDIATION?**

20 A. PNM responded to Burlington on October 28, 1998 denying that the contamination at the
21 Hampton 4M Well site was the result of any past or present operations by PNM and declined

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1 to undertake or participate in any remediation. PNM merely stated that it would "...encourage
2 Burlington to immediately proceed with remediation of the contamination...." Burlington
3 Exhibit No. 20.

4
5 **Q. DID PNM REMEDIATE THE SITE?**

6 A. No.

7 **Q. DID PNM CONTACT THE OIL CONSERVATION DIVISION?**

8 A. On November 4, 1998, PNM wrote the Oil Conservation Division and objected to the
9 remediation proposed by Burlington for various reasons including PNM's concern that
10 Burlington's remediation would interrupt PNM's ongoing remediation and monitoring
11 activities at the Hampton 4M site and would obliterate evidence concerning the release point
12 of contamination at the site. Burlington Exhibit No. 22.

13 **Q. HOW DID BURLINGTON KEEP THE OIL CONSERVATION DIVISION**
14 **APPRIZED OF ITS ACTIVITIES AT THE HAMPTON 4M WELL SITE?**

15 A. On October 28, 1998, Burlington wrote to the Oil Conservation Division's Environmental
16 Bureau and advised that data acquired from two recent soil borings confirmed that a
17 substantial amount of soil contamination remained in place in the area of PNM's operations,
18 and to a lesser extent near the previously remediated Burlington pit. Burlington stated that
19 it believed that no effort to clean up the groundwater at this site will be effective until the area
20 surrounding the old unlined dehydrator pit was remediated. Burlington also advised the
21 Division that if PNM had not agreed to undertake remediation of this site by October 30,

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1 1998, Burlington was prepared to immediately remediate the contamination on the entire
2 location. Burlington then provided the details on the remediation and monitoring work it
3 proposed to undertake at the Hampton 4M location. Burlington Exhibit No. 21.

4
5 On November 6, 1998, PNM wrote Burlington and expressed its objections to the proposed
6 remediation and asked Burlington to refrain from implementing its proposed remediation.
7 Burlington Exhibit No. 23. Burlington responded that it would proceed with its proposed
8 remediation unless otherwise directed by the Oil Conservation Division. Burlington Exhibit
9 No. 25. PNM also advised the Division that it would file a groundwater closure report on
10 PNM's former pit. Burlington Exhibit No. 24.

11
12 **V. 1999 REMEDIATION AT HAMPTON 4M WELL SITE**

13 **Q. HAS BURLINGTON REMEDIATED THE HAMPTON 4M WELL SITE?**

14 **A.** Burlington excavated the apparent source material at this site during the winter of 1998-1999.

15
16 **Q. HOW WAS THIS REMEDIATION MONITORED?**

17 **A.** I supervised the remediation of this site and our activities were witnessed at various times by
18 representatives of the Oil Conservation Division and PNM. I also contacted Philip Services
19 Corporation to take soil readings and monitor the progress.

20 **Q. DESCRIBE WHAT BURLINGTON DID TO REMEDIATE THE CONTAMINATION**
21 **AT THE HAMPTON 4M WELL SITE.**

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1 A. From November 10, 1998 through February 2, 1999, I supervised the remediation of
2 contaminated soils at the Hampton 4M Well site. As with the December 3-6, 1997
3 remediation, Burlington employed Philip Services Corporation to excavate and remediate
4 hydrocarbon impacted soils.

5
6 Under my supervision, excavation began in the in the northern portion of the production unit
7 in the area of PNM's former dehydration pit. Ron Dedrick, Maureen Gannon and Mark
8 Sikelianos from PNM were present during part of the excavation, as were Denny Foust and
9 Bruce Martin from the Division, and Robert Foley from Williams Field Services.

10
11 Prior work at the site revealed that a dozer was necessary to break up the rock. The
12 overburden was removed and stockpiled, and is depicted in Burlington Exhibit No. 26, which
13 is a photograph which shows the removal of the overburden at the Hampton 4M Well site on
14 November 10, 1998.

15
16 During the excavation, as Philip Services excavated the area where PNM's former unlined
17 dehydration pit was located, and where PNM had previously excavated to twelve feet, we only
18 encountered traces of hydrocarbon-impacted soil from approximately six feet below ground
19 surface to approximately twelve feet below the ground surface. As the excavation proceeded
20 beyond twelve feet below the ground surface, which was the depth at which PNM stopped its
21 previous excavation, Philip Services began encountering heavier amounts of

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1 hydrocarbon-impacted soil. Burlington Exhibit No. 27 is a photograph of hydrocarbon
2 staining at 12 to 13 feet below the ground surface in the vicinity of the former PNM
3 dehydration pit. It shows black hydrocarbon contamination at the location of the former PNM
4 dehydration pit. Under my supervision throughout the excavation process, soil samples were
5 collected from the excavation, and from a natural seep northwest of the well pad. At my
6 direction, Philip Services performed heated headspace analysis on all of those samples. The
7 locations of the analyses and the results thereof are shown on Philip's "Report for Work
8 Performed at the Hampton #4M Well Site" dated March 3, 1999, which is attached to this
9 testimony as Burlington Exhibit No. 28.

10
11 This excavation proceeded under my supervision to approximately 27 feet below the ground
12 surface, with water encountered at approximately 25 feet. Burlington Exhibit No. 29 is a
13 photograph of the excavation at a depth of 26 feet on November 13, 1998.

14
15 At my direction, clean overburden was brought in and used to construct three cells in the
16 bottom of the excavation. We stopped excavation activities until November 30, 1998, so that
17 we could observe ground water entering the different areas of the excavation and proceeding
18 through the cells. During the period that excavation activities were stopped, we checked the
19 cells periodically, and at my direction Dawn Trucking of Farmington pumped the accumulated
20 water out using a vacuum truck and hauled the water to Burlington's McGrath disposal pit.
21 My observation of the cells indicated that there were free phase hydrocarbons on the surface

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1 of the water in the eastern cell. The other two cells revealed little to no free phase
2 hydrocarbons. Burlington Exhibits 30, 31 and 32 are photographs of these cells showing
3 hydrocarbon on the surface of the eastern cell.

4
5 On November 30, 1998, at my direction and under my supervision, excavation of the
6 Hampton 4M Well site was resumed by Philip Services. Philip Services completed the
7 excavation of the impacted soils in the northern, western, and eastern walls, which were the
8 areas underlying and downgradient of PNM's former unlined dehydration pit.

9
10 At my direction, the project was temporarily shut down while we pursued approval to
11 landfarm on a nearby location contaminated soils from the Hampton 4M Well site. At this
12 point, the excavation had removed impacted soils from the area surrounding and
13 downgradient of PNM's former unlined pit, and from the northern wall of Burlington's former
14 pit that we had previously excavated in December 1997. Contaminated soils found in the
15 northeast part of the old excavation at the water level were removed until PID readings
16 indicated the remaining soils were clean.

17
18 From January 21, 1999 until February 2, 1999, at my direction, Philip Services continued
19 removing impacted soils. At this point, I directed that Philip Services follow what appeared
20 to be a plume of impacted soils from the area underlying PNM's former unlined dehydration
21 pit south toward the pit which Burlington had excavated in December, 1997. The impacted

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1 soils ended near monitor well MW-4. There was no connection of impacted soils from
2 Burlington's old excavation in the south to the impacted soil that was being excavated in the
3 north. I also directed Philip Services to strip out a section of the Hampton 4M Well Site
4 between the wellhead and the former excavation, in the area immediately north of where the
5 plume from PNM's former unlined pit ended. We found no contamination in this stripped out
6 section. Based on my observations, the contamination was not caused by any sources from
7 the well bore.

8
9 During the 1998-99 excavation at the Hampton 4M Well site, Burlington removed
10 approximately 6,440 cubic yards of soil. Contaminated soils are being land farmed at this
11 time and Burlington has rebuilt the location and installed a monitoring well (MW-13) in the
12 vicinity of the old monitor well MW-4.

13 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

14 **A. Yes.**

EXHIBIT "B"

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1 **I. INTRODUCTION AND QUALIFICATIONS.**

2 **Q. STATE YOUR FULL NAME FOR THE RECORD.**

3 A. Louis Edward Hasely.

4 **Q. WHERE DO YOU RESIDE?**

5 A. Farmington, New Mexico.

6 **Q. BY WHOM ARE YOU EMPLOYED, AND IN WHAT CAPACITY?**

7 A. I am employed by Burlington Resources Oil & Gas Company as a Senior Staff
8 Environmental Representative.

9 **Q. WHAT ARE YOUR RESPONSIBILITIES AS SENIOR STAFF ENVIRONMENTAL**
10 **REPRESENTATIVE?**

11 As Senior Staff Environmental Representative, I am responsible for all environmental issues
12 related to Burlington's operations in the San Juan Basin including air permitting, spill
13 cleanup pit closures and ground water issues. There are two people in our Farmington office
14 with these environmental responsibilities. ~~Our jobs are divided geographically.~~ My
15 ~~geographic~~ area of responsibility includes the Burlington Hampton 4M Well Site.

16 **Q. REVIEW YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.**

17 A. I graduated from Pennsylvania State University in 1982 with a degree in Petroleum and
18 Natural Gas Engineering. Following graduation, I went to work for Phillips Petroleum
19 Company in Casper, Wyoming, as a petroleum engineer with some responsibilities for
20 environmental matters since Phillips did not have in-house environmental staff. I moved to
21 Bartelsville Oklahoma in 1987 where my responsibilities included environmental and

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1 A. At all times since the well was completed, production from the Hampton 4M Well has been
2 sold pursuant to a contract entitled "Gas Purchase Agreement between Southland Royalty
3 and Gas Company of New Mexico." Burlington Resources Oil and Gas Company is a
4 successor to Southland Royalty. Pursuant to this agreement, PNM purchased the natural gas
5 produced from the Hampton 4M Well. Burlington Exhibit No. 1 is a copy of this Gas
6 Purchase Agreement.

7 **Q. PLEASE DESCRIBE THE HAMPTON 4M WELL SITE.**

8 A. Burlington Exhibit No. 2 is a general diagram of the Hampton 4M Well site as it existed in
9 May 1998. The location of the Hampton 4M wellhead and Burlington's related production
10 equipment are identified on this diagram. Burlington's equipment is all situated to the south
11 of the wellhead. PNM Gas Services owned and operated two dehydrators with associated
12 equipment on the northern end of the location. ~~which are also~~ Only one dehy is shown on this
13 diagram since the well was commingled in late 1997. Also indicated are the locations of the
14 former unlined surface pit operated by PNM and the former tank battery utilized by
15 Burlington and its predecessors. The areas excavated by Burlington and PNM prior to the
16 Division's March 13, 1998 letter which is the subject of this application are shown. The
17 locations of monitor wells ("MW") and temporary wells ("TPW") are also shown.

18
19 Burlington Exhibit No. 3 is a photograph of the well and associated equipment. It was taken
20 looking to the northwest and shows the site as it appeared in May 1998. The wellhead is in
21 the center of the pad. Burlington's equipment is to the south, or the left in this photograph.

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1 A. I have reviewed Burlington's records of the activities at the Hampton 4M Well site, and am
2 familiar with the courses of action taken by Burlington and PNM at the site. Burlington's
3 records reflect that in April 1996, PNM discovered contaminated groundwater at the
4 Hampton 4M gas production location under PNM's former dehydration pit, which is shown
5 on Burlington Exhibit No. 2. ~~After discovering this contamination~~, PNM excavated the site
6 of the dehydration pit to a depth of approximately 12 feet and then a soil boring revealed
7 groundwater contamination. Burlington Exhibit Nos. 7 and 14 are reports to the Division
8 by Burlington and PNM which review PNM's efforts to remediate this contamination.

9
10 Burlington Exhibit 7 reflects that, following additional investigation at the Hampton well site
11 in December 1996 and January 1997, representatives of PNM, Burlington and the Oil
12 Conservation Division met at the well on February 4, 1997 and again on April 16, 1997, to
13 discuss ground water contamination at the site.

14
15 Burlington Exhibit No. 4 demonstrates that Burlington was advised by the Oil Conservation
16 Division on April 8, 1997 that PNM had identified groundwater impacts on the southeast
17 corner of the Hampton 4M location related to Burlington's activities and directed Burlington
18 to address the cause and extent of the groundwater impact related to its activities at the
19 Hampton 4M location.

20 **Q. WAS ANY ADDITIONAL CONTAMINATION DISCOVERED AT THIS SITE IN**
21 **APRIL 1997?**

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1 A. Yes. Burlington's records indicate that during a site visit on April 14, 1997, Burlington
2 discovered a surface seep of hydrocarbons to the north of the well pad and immediately
3 northwest of the former PNM surface disposal pit at its combination production unit. Free
4 phase hydrocarbons were seeping from the ground into a small drainage area.

5 **Q. HOW DID BURLINGTON RESPOND TO THE DISCOVERY OF THIS SEEP?**

6 A. Burlington notified the Oil Conservation Division and PNM of this contamination and on
7 April 16, 1997 hosted an on-site meeting with representatives of the Oil Conservation
8 Division and PNM.

9
10 At this meeting the Oil Conservation Division requested immediate action to contain this
11 contamination and Burlington agreed to construct a collection trench to slow or stop this
12 hydrocarbon seep.

13
14 An archeological clearance was obtained by Burlington and we constructed the trench on
15 April 17, 1997.

16
17 Burlington Exhibit No. 5 is a photograph looking east southeast which shows the well pad
18 for the Hampton 4M Well. Fenced off in orange is the area of the hydrocarbon seep
19 discovered on April 14, 1997. PNM's former dehydration equipment can be seen on the
20 well pad above the site of the seep.

21

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1 Q. WHAT WAS BURLINGTON'S RESPONSE TO THE OIL CONSERVATION
2 DIVISION'S APRIL 8, 1997 LETTER?

3 On April 15, 1997, Burlington submitted to the Oil Conservation Division its Plan Of Action
4 for the Hampton 4M Production location. Burlington Exhibit No. 6 is a copy of this Plan of
5 Action. Burlington attempted to excavate the area of the former tank discharge pit on April
6 30, 1997 but encountered hard layers of sandstone one foot below the bottom of the former
7 production pit which could not be penetrated by the excavator. A Photo Ionization Detector
8 ("PID") survey revealed no signs that hydrocarbon contamination existed. Nine off ten test
9 holes were excavated, but no hydrocarbon contamination was found. Burlington Exhibit 7
10 is a letter dated July 30, 1997 reporting the results of this investigation to the Division.
11 Following extensive soil and ground water sampling, and meetings with Oil Conservation
12 Division representatives, and in compliance with Oil Conservation Division directive, on
13 September 19, 1997 Burlington filed a work plan with the Division which, among other
14 matters, proposed to remove sandstone in the southeast portion of the well site and continue
15 removal and screening of the layers of rock until a source area was located using a Photo
16 Ionization Detector. Burlington Exhibits 8, 9, and 10 are copies of this Work Plan and
17 related correspondence from the Division.

18
19 Between December 3 and December 6, 1997, Burlington undertook the removal of
20 contaminated soils from the area around Burlington's former tank batter. Burlington hired
21 Philip Services Corporation ("Philip Services") to perform the work during this period. I

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1 supervised the remediation performed by Philip Services. Denver Bearden of PNM and Mr.
2 Denny G. Foust of the Oil Conservation Division were also present at different times during
3 the remediation.

4
5 During the remediation which I supervised between December 3 and December 6, 1997,
6 Philip Services excavated approximately 1000 cubic yards of soil. ~~When Contaminated soils~~
7 ~~were first encountered, several feet below the surface, and at my request, PID readings were~~
8 ~~taken from all four walls and the floor of the excavation. Those Initial PID readings were~~
9 ~~all in excess of 100 ppm. When the excavation reached an area of 60 feet long by 30 feet~~
10 ~~wide by 15 feet deep,~~ Around noon on 12/4/97, Mr. Foust asked that additional PID
11 readings be taken. Those readings indicated PID levels of 51 ppm on the west wall, 273 ppm
12 on the north wall, 388 ppm on the east wall, and 195 ppm on the bottom of the excavation.
13 The excavation ~~was stopped~~ work resumed at that time. When the excavation reached an
14 area of approximately 60 feet long by 30 feet wide by 15 feet deep, additional PID readings
15 were collected from the wells and bottom. All readings were below 100 ppm and the
16 excavation was stopped at that time.

17
18 On July 30, 1998, Burlington reported to the Division the results of the December 3-6, 1997
19 remediation. Burlington Exhibit No. 11 is a copy of Philip Services' January 28, 1998
20 Report for Work Performed at the Hampton 4M site.

21 **Q. DID BURLINGTON PARTICIPATE IN THE MONITORING OF THE**

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1 Q. DESCRIBE WHAT BURLINGTON DID TO REMEDIATE THE CONTAMINATION
2 AT THE HAMPTON 4M WELL SITE.

3 A. From November 10, 1998 through February 2, 1999, I supervised the remediation of
4 contaminated soils at the Hampton 4M Well site. As with the December 3-6, 1997
5 remediation, Burlington employed Philip Services Corporation to excavate and remediate
6 hydrocarbon impacted soils.

7
8 Under my supervision, excavation began in the in the northern portion of the production unit
9 in the area of PNM's former dehydration pit. Ron Dedrick, Maureen Gannon and Mark
10 Sikelianos from PNM were present during part of the excavation, as were Denny Foust and
11 Bruce Martin from the Division, and Robert Foley from Williams Field Services.

12
13 Prior work at the site revealed that a dozer was necessary to ~~back break~~ break up the rock. The
14 overburden was removed and stockpiled, and is depicted in Burlington Exhibit No. 26, which
15 is a photograph which shows the removal of the overburden at the Hampton 4M Well site on
16 November 10, 1998.

17
18 During the excavation, as Philip Services excavated the area where PNM's former unlined
19 dehydration pit was located, and where PNM had previously excavated to twelve feet, we only
20 encountered traces of hydrocarbon-impacted soil from approximately six feet below ground
21 surface to approximately twelve feet below the ground surface. As the excavation proceeded

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1 to be a plume of impacted soils from the area underlying PNM's former unlined dehydration
2 pit south toward the pit which Burlington had excavated in December, 1997. The impacted
3 soils ended near monitor well MW-4. There was no connection of impacted soils from
4 Burlington's old excavation in the south to the impacted soil that was being excavated in the
5 north. I also directed Philip Services to strip out a section of the Hampton 4M Well Site
6 between the wellhead and the former excavation, in the area immediately north of where the
7 plume from PNM's former unlined pit ended. We found no contamination in this stripped out
8 section. Based on my observations, ~~there is no possibility that~~ the contamination was not
9 caused by any sources from the well bore.

10
11 During the 1998-99 excavation at the Hampton 4M Well site, Burlington removed
12 approximately 6,440 cubic yards of soil. Contaminated soils are being land farmed at this
13 time and Burlington has rebuilt the location and installed a monitoring well (MW-13) in the
14 vicinity of the old monitor well MW-4.

15 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

16 **A. Yes.**