AP - 002

STAGE 1 & 2 WORKPLANS

DATE:

May, 1998

WESTGATE SUBDIVISION, GRIMES BATTERY and TASKER ROAD STAGE 1 ABATEMENT PLAN

(SITE ASSESSMENT INVESTIGATION)

May 1998

Shell Exploration and Production Technology Company

Houston, Texas

Prepared by

PSC
PHILIP SERVICES CORP.

7904 I-20 West
Midland, TX 79706

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1.0 INTRODUCTION

The subjects sites are located in west Hobbs, New Mexico. The Westgate Subdivision consists of developed and undeveloped property bordered by Tasker Road to the East, the Los Cuatro Land Development property to the West, Sanger Road to the South, and Princess Jeanne Drive to the North. The scope of this plan also includes undeveloped property extending approximately 400 feet west of Cobb Drive (**Figure 1**). The Grimes site is a former tank battery location that was decommissioned in 1993. The Tasker site consists of two residential properties; one currently occupied and one undeveloped (**Figure 2**). Assessment activities were recently performed at the Grimes and Tasker sites, and the results of the assessment activities were submitted to the New Mexico Oil Conservation Division (NMOCD).

2.0 SITE HISTORY

2.1 WESTGATE SUBDIVISION

The subject site consists of residential and undeveloped properties, and is bordered to the East by Tasker Road, the South by Sanger Street, and the North by Princess Jeanne. The scope of this plan includes the undeveloped property owned by Los Cuatro Land Development extending approximately 400 feet west of Cobb Street.

Two areas of stained soil have been observed on the surface on the subject site. One area of subsurface asphaltic material that occurs at a depth of approximately 1 foot below ground surface (BGS) has been observed by NMOCD representatives. The asphaltic material was sampled by the NMOCD and submitted for laboratory analysis. Laboratory analysis is not complete at the time of this report, and therefore analytical results are not available.

2.2 GRIMES BATTERY

The subject site is a former tank battery location on the Grimes Lease, currently operated by Altura Energy LTD. According to Altura Energy LTD's remediation plan submitted for this property, the site has been in use as an oilfield tank battery since 1946. The tank battery was decommissioned in 1993. In September 1997, Altura Energy LTD. submitted a plan for the remediation of oil impacted soil at the subject site. Following removal of tanks and equipment at the battery location, Altura Energy LTD. representatives excavated soils in an area that was suspected to have been a former emergency pit. Soils were excavated to a depth of approximately 14 feet below ground surface (bgs). A total of 4,259.58 cubic yards of soil were excavated and transported to Sundance Services, Inc., Parabo Disposal Facility located in Eunice, New Mexico. According to Altura Energy LTD. personnel, the soils were screened on-site for total petroleum hydrocarbons (TPH). Removal of these soils is likely to have removed a potential source of groundwater impacts.

Philip representatives were on-site December 5 and December 8, 1997, to oversee the installation of a temporary monitor well and monitor well at the former battery site (**Figure 3**).

The groundwater sample collected from temporary monitor well TMW-1 exhibited concentrations in excess of Human Health Standards for groundwater as outlined in New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2 (20 NMAC 6.2), section 3103 for benzene (0.044 mg/L), methylene chloride (0.110 mg/L) and phenols (0.14 mg/L). The 20 NMAC 6.2 Human Health Standards for these constituents are 0.01 mg/L, 0.10 mg/L, and 0.005 mg/L, respectively. Methylene chloride is a commonly used cleaning agent for the decontamination of laboratory equipment, and may have been detected as a result of laboratory procedures.

The groundwater sample collected from monitor well MW-1 exhibited a phenols concentration of 0.15 mg/L, which is in excess of the 20 NMAC 6.2 Human Health Standard of 0.005 mg/L.

No other analytes exhibited concentrations in excess of 20 NMAC 6.2 Human Health Standards in either of the groundwater samples. Of a total 83 compounds analyzed, 52 were not detected in the samples.

Analytical results and details of assessment activities can be found in the report prepared by Philip Services Corporation entitled *Grimes Battery Soil and Groundwater Assessment Report.*

2.3 TASKER ROAD

The subject site is located at 1331 and 1329 Tasker Road, Hobbs, New Mexico. The site consists of two residential properties; one currently occupied and one undeveloped As a result of the construction activities, an asphalt-like layer was observed to be present at the site. The layer occurs at a depth of approximately one to two feet below ground surface (bgs) and varies in thickness from several inches to several feet across the properties. The asphalt-like substance appears to be oil that may have been spread on the ground under normal operating practices in the 1940's.

Shell representatives sampled the material in November 1997, and analyzed the samples for total petroleum hydrocarbons (TPH); benzene, toluene, ethylbenzene, and xylenes (BTEX); total chlorides, and TCLP metals.

Analysis of TCLP metals indicates that all constituents analyzed are below detection limits. Total chlorides were detected at a concentration of 128 milligrams per kilogram (mg/kg). Benzene, toluene, and ethylbenzene concentrations were below detection limits, and minor concentrations of total xylenes were detected at a concentration of 0.017 mg/kg. TPH compounds were analyzed using GC/FID scan to identify and quantify the analytes present in the sample, providing a chemical fingerprint of the compounds. Analytical results indicate the

presence of n-Alkanes C13-C40. The chromatography exhibited characteristics described by the laboratory as those of weathered oil. The value for numerous branched alkanes and cyclic hydrocarbons (unresolved, 4122 mg/kg) are representative of USEPA Method 8015 analysis.

A subsurface investigation was performed by Philip representatives January 20 and 26, 1998. As approved by the NMOCD, the scope of the subsurface investigation was to collect two samples at each of five sample locations (**Figure 4**). The sample locations consisted of each of the four corners and the center of the suspected area of asphaltic material. The sample locations were selected based on the use of an aerial photograph and on accessibility of a backhoe. One sample was collected from the asphaltic material at a depth of approximately 1-2 feet bgs, and one sample was collected from soil beneath the asphaltic material at a depth of 5-6 feet bgs in each location.

Two soil samples were collected from each of five sample locations and submitted for analysis to Trace Analysis in Lubbock, Texas. The samples were analyzed for the compounds listed in 20 NMAC 6.2, sections 1101 and 3103 as requested by NMOCD.

No pesticides, chlorinated compounds, polycyclic aromatic hydrocarbons (PAHs), or semi-volatile compounds (SVOCs) were detected. With the exception of tetrachlorethane, ethylbenzene and m&p-xylenes, no volatile organic compounds were detected. Metals identified in the samples include barium, nickel, zinc, aluminum, iron, manganese, copper, cadmium, selenium, and arsenic. Minor concentrations of radium 226 or radium 228 were detected in some of the samples.

TPH concentrations were detected in each of the samples and range from 1,800 mg/kg to 200,000 mg/kg. Ethylbenzene was detected in six of the ten samples at concentrations ranging from 0.1 mg/kg to 9.7 mg/kg. M&p-Xylenes were detected in six samples at concentrations ranging from 0.13 to 39 mg/kg. Tetrachloroethane was detected in sample SS-3, 5.5 feet at a concentration of 0.54 mg/kg.

Of a total of 1,790 compounds analyzed, 1,630 were not detected in the samples.

In addition to the sampling performed at this site, the area was trenched using a backhoe to identify the horizontal extent of the asphaltic material. The extent of asphaltic material as observed in the field is shown in **Figure 4.**

Analytical results and details of assessment activities can be found in the report prepared by Philip Services Corporation entitled *Tasker Road Site Assessment Report.*

3.0 STAGE 1 ABATEMENT PLAN

The following Stage 1 Abatement Plan replaces *Grimes Battery and Tasker Road Stage 1 Abatement Plan* submitted to the NMOCD April 24, 1998 and *Grimes Battery and Tasker Road Stage 1 Abatement Plan Addendum* submitted to the NMOCD April 28, 1998. The Stage 1 Plans previously submitted address work requested by NMOCD in their letter dated March 23, 1998. This revision addresses additional work requested by NMOCD following their review of the Stage 1 Abatement Plans submitted in April, in a letter dated May 1, 1998, and meeting discussion May 1, 1998. The initial Stage 1 Abatement Plans and NMOCD's request for additional work are included in **Appendix I**.

PART A
WESTGATE SUBDIVISION

PART A. WESTGATE SUBDIVISION

A soil gas survey will be performed in subject area. A total of 48 locations will be sampled at a depth of 0-2 feet bgs, as practicable, using Direct Push Technology. The proposed sample locations will be spaced at 250 foot intervals (**Figure 5,** sample locations 1-43). In addition to the 250 foot spacing, 5 sample locations will be placed in areas of suspected former operations (**Figure 5**, sample locations 44-48). Selection of the additional sample locations is based on aerial photographs and the surveyed map of existing and plugged and abandoned oil and gas wells (**Appendix II**).

The samples will be analyzed in the field for total petroleum hydrocarbons (TPH) using USEPA method 8015 modified, aromatic hydrocarbons/ BTEX using USEPA method 8020 modified and halogenated hydrocarbons using USEPA method 8010 modified.

A map of oil and gas lease holders within the Westgate Subdivisions and Los Cuatro Land Development is included in **Appendix II**. NMOCD has requested a map showing all oil and gas leaseholders and existing and plugged and abandoned wells within one mile of the Grimes Battery. Due to the large volume of data required to be researched and surveyed to produce this map, the information is currently being compiled, and will be submitted to the NMOCD as the information is available.

Sources of aerial photography continue to be investigated to obtain aerial photographs spanning the time the lease has been operable. All aerial photographs identified and available to date are included in **Appendix II**.

PART B
GRIMES BATTERY

PART B. GRIMES BATTERY

The excavated pit area and two areas of hydrocarbon staining observed north of the excavation will be investigated for the possible presence of hydrocarbon contamination.

The backyard of the residence located at 1341 North Cobb Street (**Figure 6**) will be investigated using augering techniques to delineate the horizontal and vertical extent of hydrocarbon. Augering will be employed rather than drilling of a borehole due to restricted access for a drilling rig. As necessary to delineate the extent, soil samples will be collected by auger, screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. Sampling will continue until no PID readings, staining, and odors are observed.

One sample collected from backyard of the residence located at 1341 North Cobb Street (**Figure 6**) will be submitted for laboratory analysis. The sample exhibiting the highest PID reading will be submitted for laboratory analysis for compounds listed in New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2, sections 3103 and 1101 (20 NMAC 6.2 3103 and 1101) as requested by the NMOCD. Laboratory analysis of these compounds will be performed using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, 353.3, and 418.1.

In the event that PID readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis.

In addition to the sampling described above, one sample will be collected by auger from the front yard of the residence located at 1341 North Cobb Street. The sample will be submitted for laboratory analysis for TPH using USEPA method 418.1, chlorides using USEPA method 160.1, and for agricultural general chemistry.

The area north of the tank battery where stained soil was observed (**Figure 6**) will be investigated to delineate the horizontal and vertical extent of hydrocarbon by trenching using a backhoe or other equipment. One borehole will be drilled at this location. Soils will be sampled at a depth of 2-3 feet bgs, and at five-foot intervals. Soil samples will be screened in the field for VOCs using a PID, and will be inspected for the presence of staining or odor. Drilling and sampling will continue until no PID readings, staining, and odor are observed. The sample collected at a depth of 2-3 feet bgs, the sample exhibiting the highest PID reading, and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for compounds listed in New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2, Sections 3103 and 1101 (20 NMAC 6.2 3103 and 1101) as requested by the NMOCD. Laboratory analysis of these compounds will be performed using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, 353.3, and 418.1.

In the event that PID readings do not coincide with visual observation of staining, one representative sample of stained material will be collected and submitted for analysis.

Four boreholes will be installed in the area of the excavated pit. Proposed borehole locations are shown in **Figure 7**. The boreholes will be placed to identify if contaminant concentrations are present in the base and sidewalls of the pit excavation. The pit area has been partially filled with clean backfill material. No samples will be collected from the backfill material. When soils beneath the backfill are encountered, the soils will be sampled at a depth of 2-3 feet below the backfill and at five-foot intervals. Soil samples will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. Drilling and sampling will continue until no PID readings, staining, and odors are observed. The sample exhibiting the highest PID reading and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for total petroleum hydrocarbons (TPH) using USEPA Method 418.1, benzene, toluene, ethylbenzene, and xylenes (BTEX) using USEPA Method 8020, and chlorides using USEPA Method 300. In the event that PID readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis. The sample collected at a depth of 2-3 feet below the backfill material will be submitted to Trace Analysis in Lubbock, Texas and analyzed for the compounds listed in New Mexico Water Quality Control Commission (WQCC) sections 1101 and 3103 standards using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, 353.3, and 418.1.

Five monitor wells will be installed in the pit area in order to identify the groundwater gradient at the site and identify the downgradient extent of groundwater impacts. One monitor well will be installed northwest of the pit (assumed to be upgradient), one monitor well will be installed southeast of the former temporary monitor well (assumed to be in the source area), and three monitor wells will be installed (south, southeast, and southwest) of existing monitor well MW-1 (assumed to be downgradient). Proposed monitor well locations are shown in **Figure 7**. Soil samples will be collected at five-foot intervals and will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. The sample exhibiting the highest PID reading and the sample collected from the interval where groundwater is encountered will be submitted for laboratory analysis for compounds listed in New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2, sections 3103 and 1101 (20 NMAC 6.2 3103 and 1101) as requested by the NMOCD. Laboratory analysis of these compounds will be performed using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, 353.3, and 418.1.

A groundwater sample from each of the monitor wells and from MW-1 will be collected and submitted for analysis for compounds listed in New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2, sections 3103 and 1101 (20 NMAC 6.2 3103 and 1101). Laboratory analysis of these compounds will be performed using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, 353.3, and 418.1.

Based on field observation, additional field work may be conducted at each of the above-referenced locations. Additional sampling or delineation will be conducted with the approval of the NMOCD.

All boreholes will be plugged to surface with a cement grout containing a minimum of 3-5% bentonite. Monitor wells will be constructed using 4-inch inside-diameter schedule 40 PVC casing. The wells will be constructed with fifteen feet of slotted PVC casing, 10 feet below top of groundwater, and five feet above top of groundwater. The wells will be sand-packed with a two foot bentonite plug placed immediately above the sand pack. The wells will be grouted above the bentonite plug with cement containing 3-5% bentonite, and completed with a four-inch locking monument sleeve cover. Proposed monitor well construction is shown in **Figure 8**.

PART C
TASKER ROAD

PART C. TASKER ROAD

Ten boreholes will be installed at the Tasker Road site in order to identify the horizontal and vertical extent of hydrocarbon impacts. The proposed borehole locations are shown in **Figure 9**. The locations have been selected based on field observation of the edge of the asphaltic material and on proximity to the residential foundation.

The sample locations adjacent to the residential foundation will be sampled at a depth of 2-3 feet bgs, five feet bgs, and ten feet bgs. Soil samples will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. Each sample will be submitted for laboratory analysis for TPH (using USEPA Method 418.1) and for the compounds listed in 20 NMAC 6.2 3103 and 1101 Laboratory analysis of these compounds will be performed using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, and 353.3.

Drilling and sampling of each of the other seven borehole locations will continue until no PID readings, staining, and odors are observed. The sample collected at a depth of 2-3 feet bgs, the sample collected at a depth of five feet bgs, the sample exhibiting the highest PID reading and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for TPH (using USEPA Method 418.1) and for the compounds listed in 20 NMAC 6.2 3103 and 1101 using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, 353.3.

In the event that PID readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis. One monitor well will be installed to identify if groundwater has been impacted at the site. The monitor well will be installed at the location shown in **Figure 9.** Soil samples will be collected a depth of 2-3 feet bgs, and at five-foot intervals will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. The sample exhibiting the highest PID reading and the sample collected from the interval where groundwater is encountered will be submitted for laboratory analysis for the compounds listed in 20 NMAC 6.2 3103 and 1101 using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, 353.3, and 418.1.

One background sample will be collected from a depth of 2-3 feet bgs. The sample will be collected from the upgradient monitor well location at the Grimes Battery (**Figure 7**). The sample will be analyzed for metals to identify background concentrations in native soils in this area.

All boreholes will be plugged to surface with a cement grout containing a minimum of 3-5% bentonite. The monitor well will be constructed using 4-inch inside-diameter schedule 40 PVC casing. The well will be constructed with fifteen feet of slotted PVC casing, 10 feet below top of groundwater, and five feet above top of groundwater. The well will be sand-packed with a

two foot bentonite plug placed immediately above the sand pack. The well will be grouted above the bentonite plug with cement containing 3-5% bentonite, and completed with a four-inch locking monument sleeve cover. Proposed monitor well construction is shown in **Figure 8**.

As requested by the NMOCD, detection of metals and napthalenes by the NMOCD's laboratory in soil samples collected at sample locations SS-1 and SS-2 will be addressed with the results of this Stage 1 Abatement Plan. Following completion of this Stage 1 Abatement Plan activities, a report of field activities and results will be submitted to NMOCD. The report will include recommendations for further Stage 1 activities or a Stage 2 Abatement Plan based on assessment results from this and previous work, including constituent concentrations detected by NMOCD's laboratory and a table comparing detection limits of the laboratories that performed the analysis. Shell requests that the NMOCD indicate in their response to this plan the acceptable detection limit for each compound to be analyzed, and Shell will contract a laboratory to meet the detection limit requirements.

Based on field observation, additional field work may be conducted at each of the above-referenced locations. Additional sampling or delineation will be conducted with the approval of the NMOCD.

4.0 QUALITY ASSURANCE

All sampling and analysis will be performed consistent with the standards outlined in 20 NMAC 6.3107 B.

5.0 SCHEDULE

Field activities will be scheduled following written approval of the Stage 1 Abatement Plan by the NMOCD. Field activities will be initiated immediately, subject to the availability of a qualified and experienced driller, and direct push technology equipment. It is anticipated that field activities will require a minimum of 15 work days. In order to minimize the noise disturbance to area residents, field activities will be scheduled Monday through Friday, 8:00 am - 5:00 pm., weather permitting (including wind conditions to limit the potential for dust). The results of the Stage 1 Abatement Plan and recommendations for remediation of the sites will be submitted within 60 days of the completion of field activities. This will allow sufficient time necessary for laboratory analysis, evaluation of the data, and remedial design.

6.0 HEALTH AND SAFETY PLAN

All site activities will be in accordance with Occupational Safety and Health Administration (OSHA) standards. All on site personnel will be required to wear a hard hat, safety glasses, and steel-toe shoes during work activities.

In addition to OSHA worker protection requirements, onsite air monitoring will be performed during site activities. The objective of the ambient air monitoring is to collect sufficient data to support a demonstration that the overall site activities do not significantly impact human health in the area surrounding the site. Specific objectives will include:

- monitoring to document ambient air quality upwind and downwind of the site prior to site activities to provide a baseline for comparison; and,
- monitoring of ambient air quality upwind and donwind of the site during site activities to immediately identify emission occurrences and allow for prompt corrective measures of operations.
- Real time ambient air sampling will be conducted to monitor the concentrations of particulates and VOC's.

7.0 REFERENCES

Grimes Battery Soil and Groundwater Assessment Report; Philip Services Corporation; February, 1998

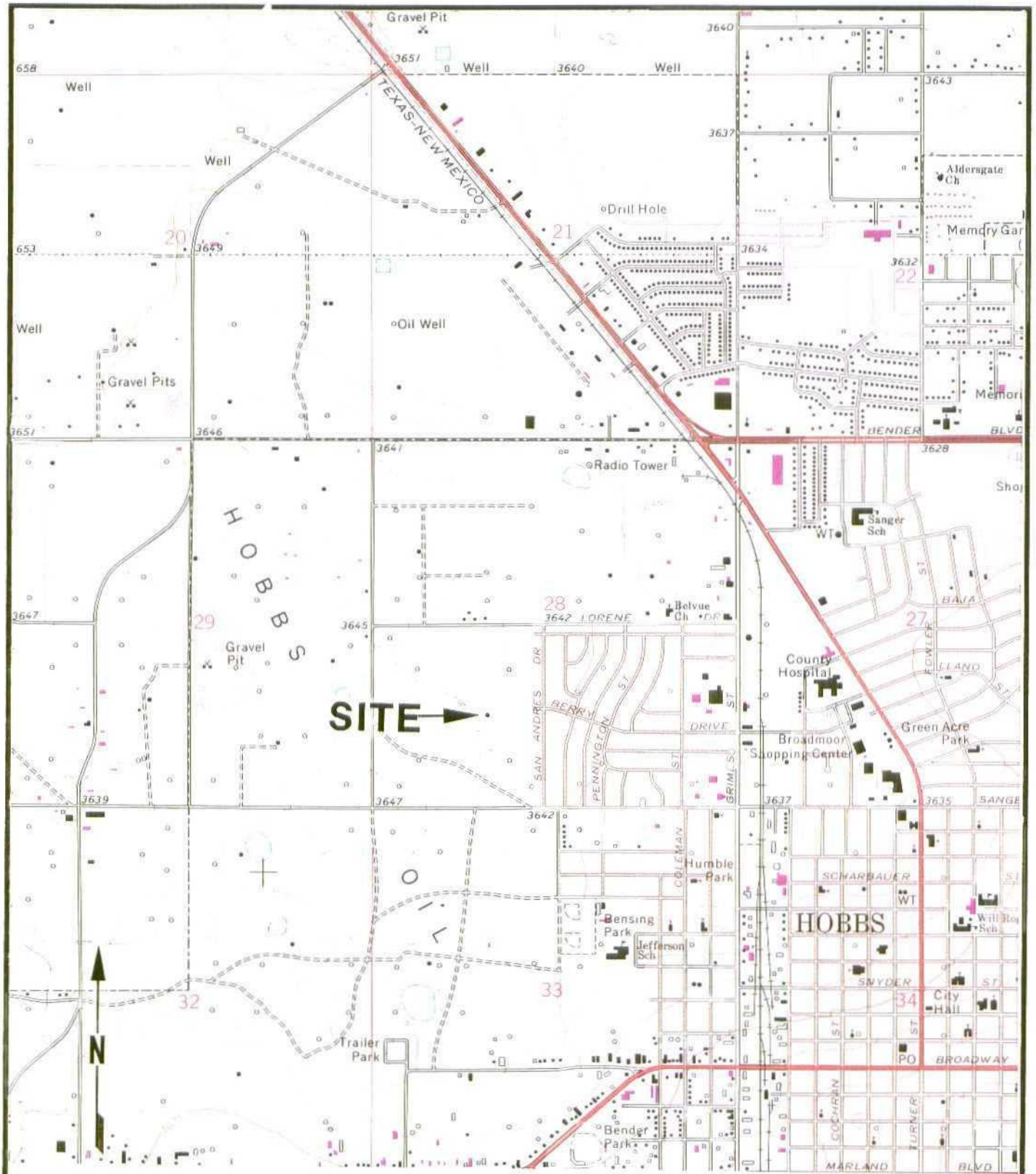
Groundwater Handbook; United States Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information; 1992

Hydrology and Hydrochemistry of the Ogallala Aquifer, Southern High Plains, Texas Panhandle and Eastern New Mexico; Report Number 177; Bureau of Economic Geology; 1988

Hydrogeochemistry and Water Resources of the Lower Dockum Group in the Texas Panhandle and Eastern New Mexico; Report Number 161: Bureau of Economic Geology; 1986

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart I

Tasker Road Site Assessment Report; Philip Services Corporation; February, 1998



HOBBS WEST QUADRANGLE
NEW MEXICO - LEA Co
7.5 Minute Series (Topographic)
1969
Photo Revised 1979

PHILIP SERVICES CORP

TITLE:
SHELL EXPLORATION & TECHNOLOGY COMPANY

SITE LOCATION MAP

DWN:	DES.:	PROJECT NO.: 18906
CHKD: seh	APPD: seh	
DATE: FEB. 1998	REV.: 1	FIGURE 1

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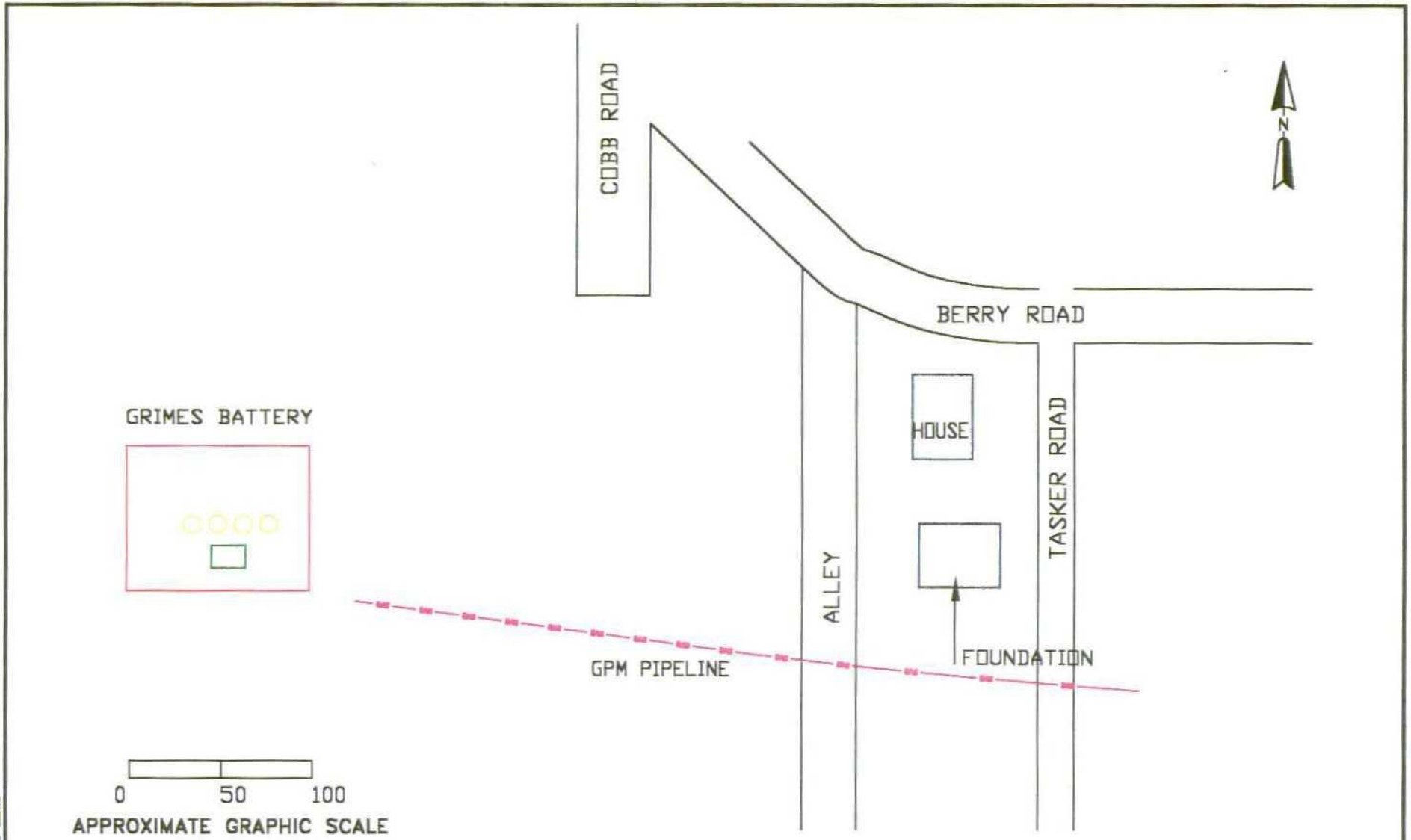


PSC
PHILLIPS SERVICES CORP.

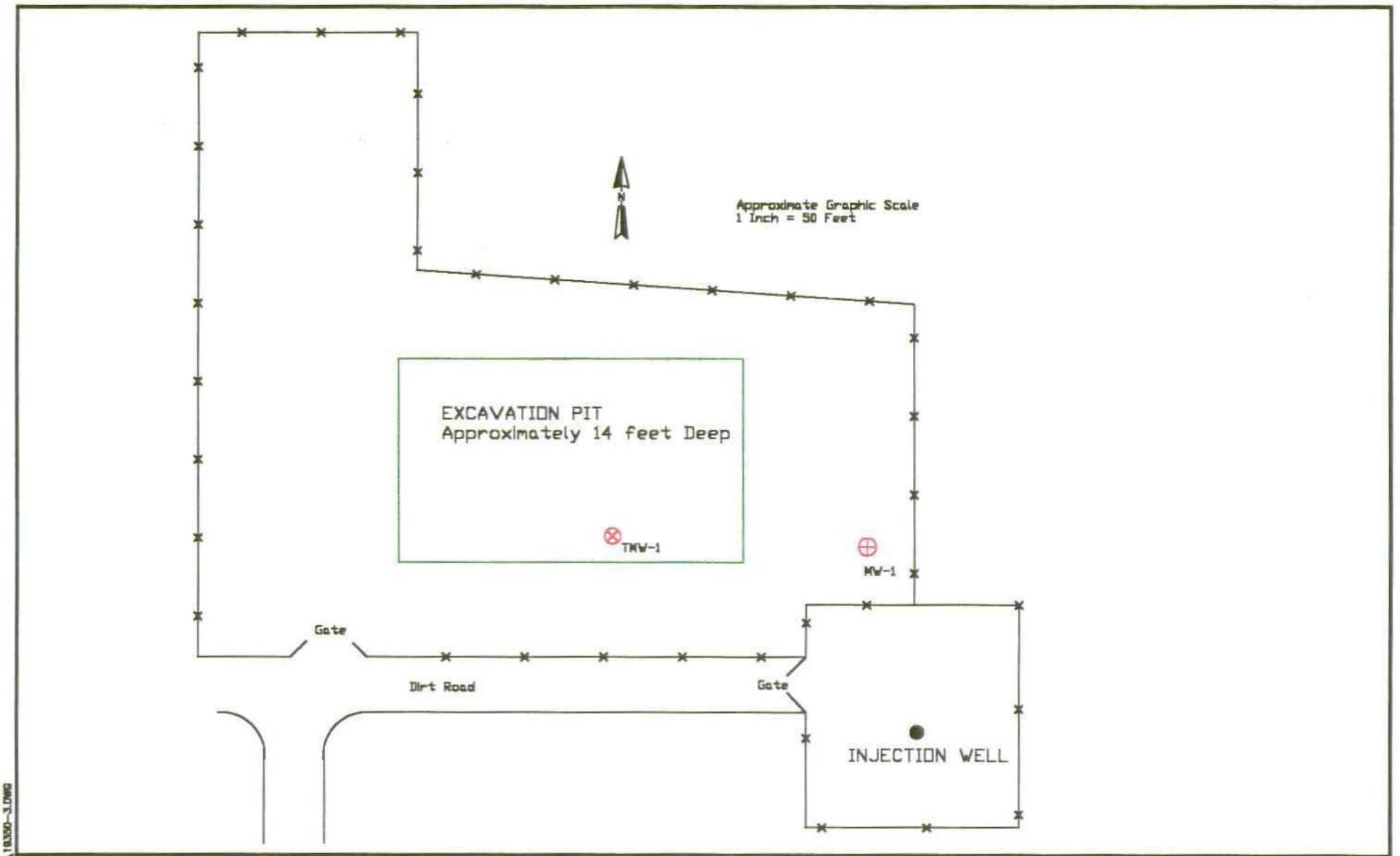
TITLE:
Shell Exploration & Technology Company
Westgate, Grimes, Tasker Stage 1 Abatement Workplan
Site Map

DWN:	DES.:
ko	seh
CHKD:	APPD:
seh	seh
DATE:	REV.:
May 1998	

PROJECT NO.: 19350
Grimes & Tasker
Hobbs, New Mexico

FIGURE: 2

Projects\19350\19350-2.DWG
ko



PSC

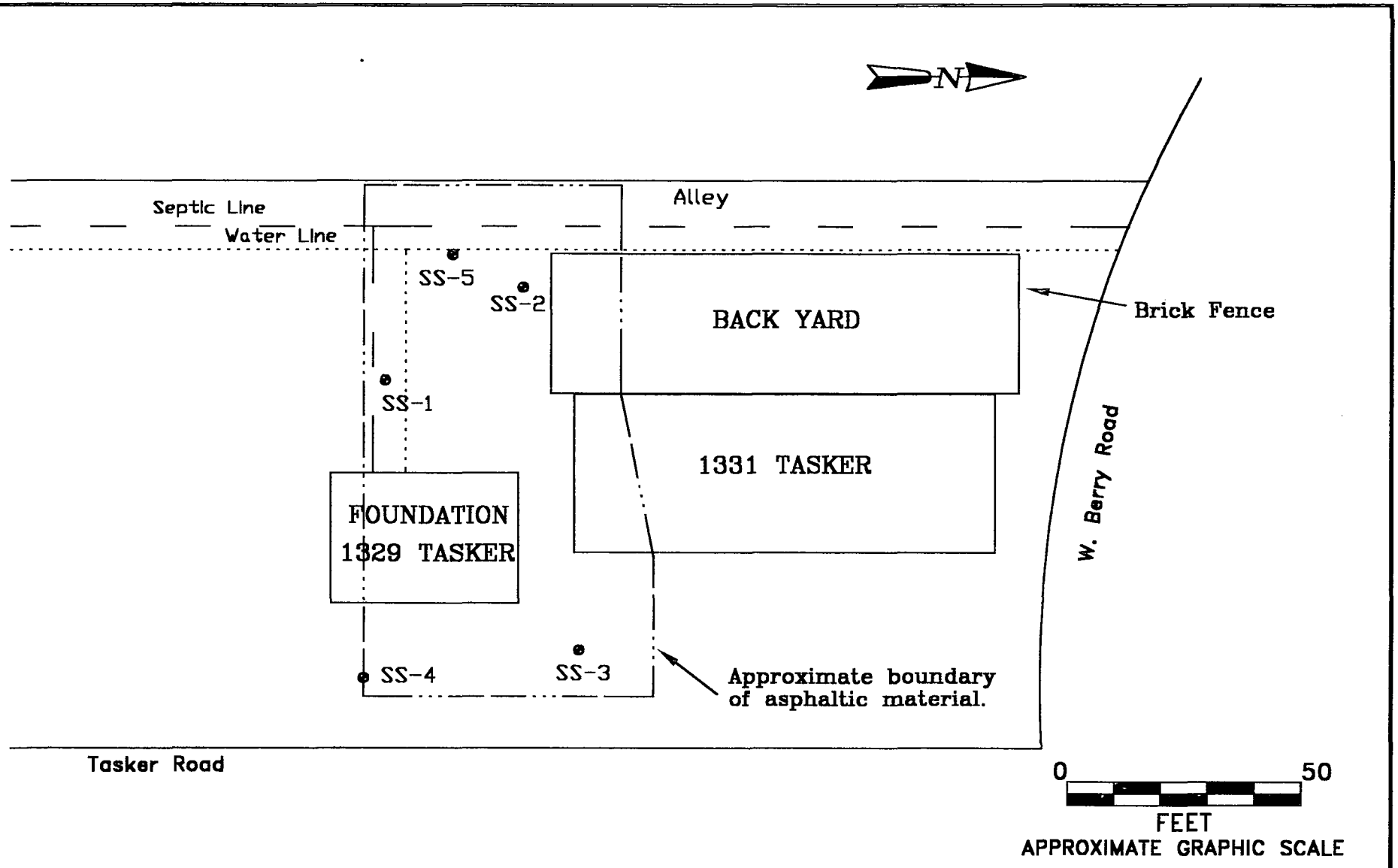
TITLE:
Shell Exploration & Technology
Westgate, Grimes, Tasker Stage 1 Abatement Workplan
Monitor Well Locations

DWN:	DES.:
ko	seh
CHKD:	APPD:
seh	seh
DATE:	REV.:
May 1998	

PROJECT NO.: 19350
Grimes & Tasker
Hobbs, New Mexico

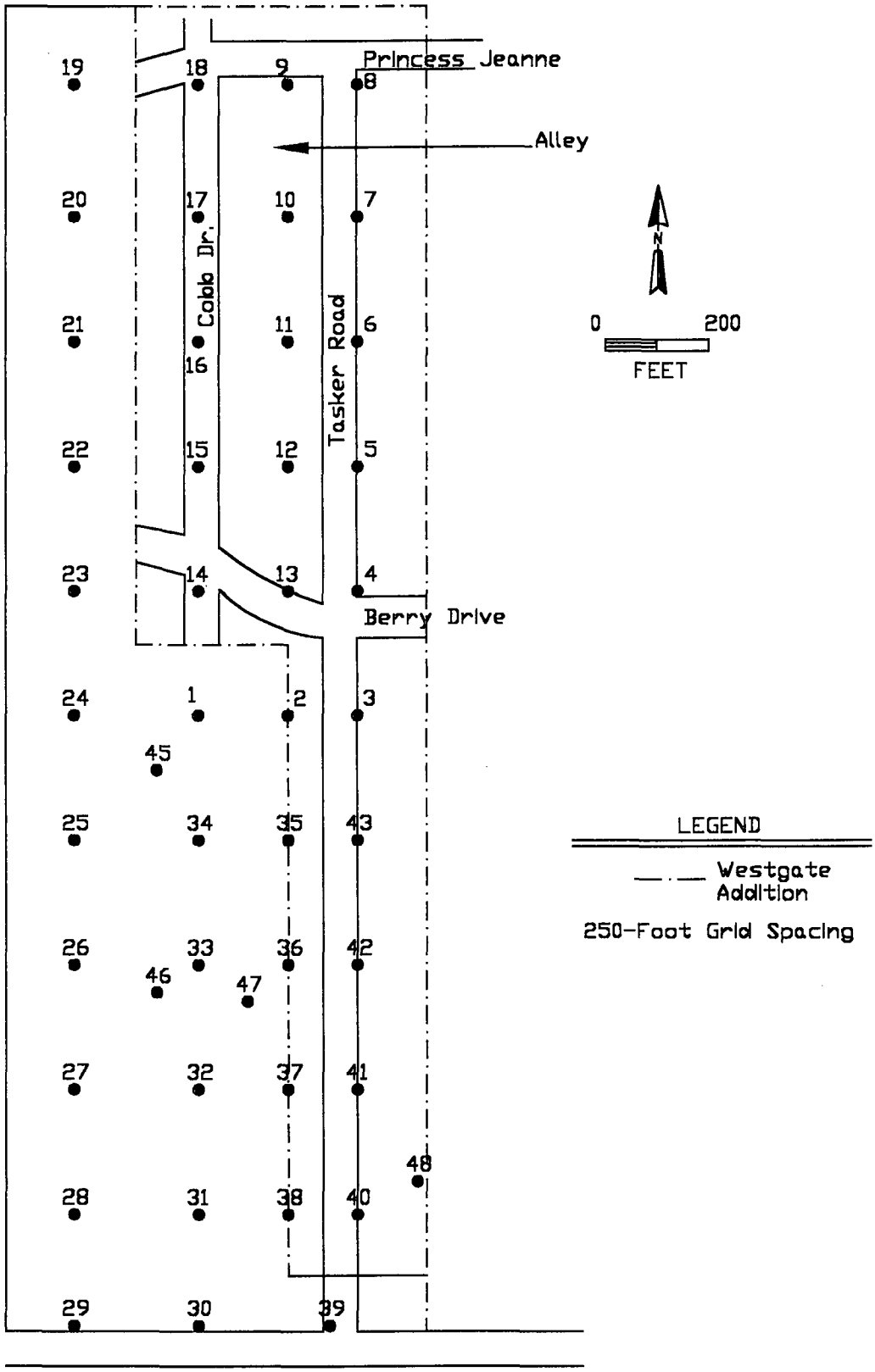
FIGURE: 3

Projects\19350\19350-3.DWG



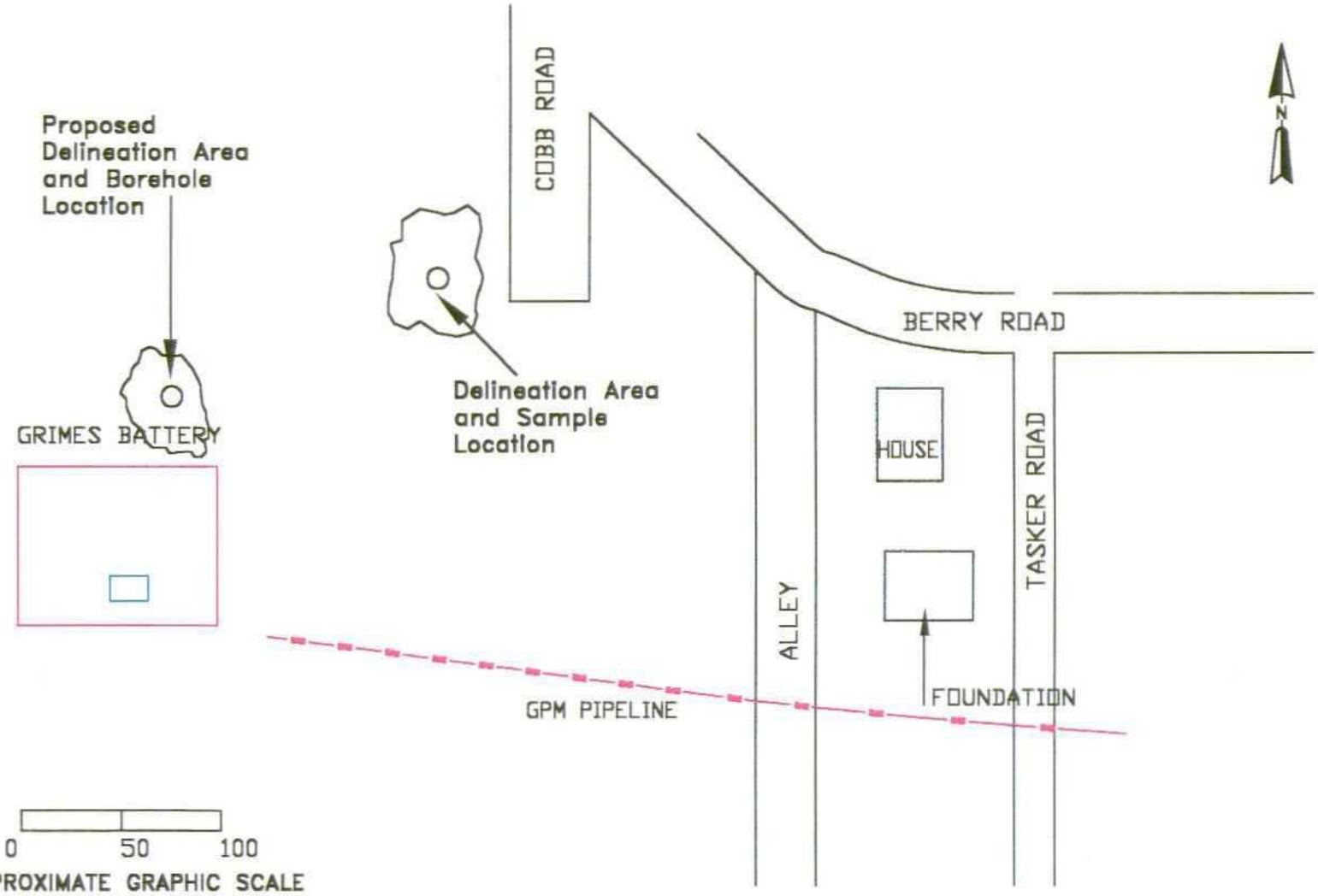
PSC	TITLE: Shell Exploration & Technology Company Westgate, Grimes, Tasker Stage 1 Abatement Workplan Visible Extent of Asphaltic Material	DWN:	DES.: seh	PROJECT NO.: 19350 Tasker Road Hobbs, New Mexico
		CHKD: seh	APPD: seh	
		DATE: May 1998	REV.:	FIGURE: 4

Projects\19350\19350-4.DWG



PSC	TITLE: Shell Exploration & Technology Company Westgate, Grimes, Tasker Stage 1 Abatement Workplan Proposed Soil Vapor Survey Sample Locations	DWN: seh / DES.: seh CHKD: seh / APPD: seh DATE: May 1998 / REV.:	PROJECT NO.: 19350 Grimes & Tasker Hobbs, New Mexico	FIGURE: 5

Projects\19350\19350-6a.DWG



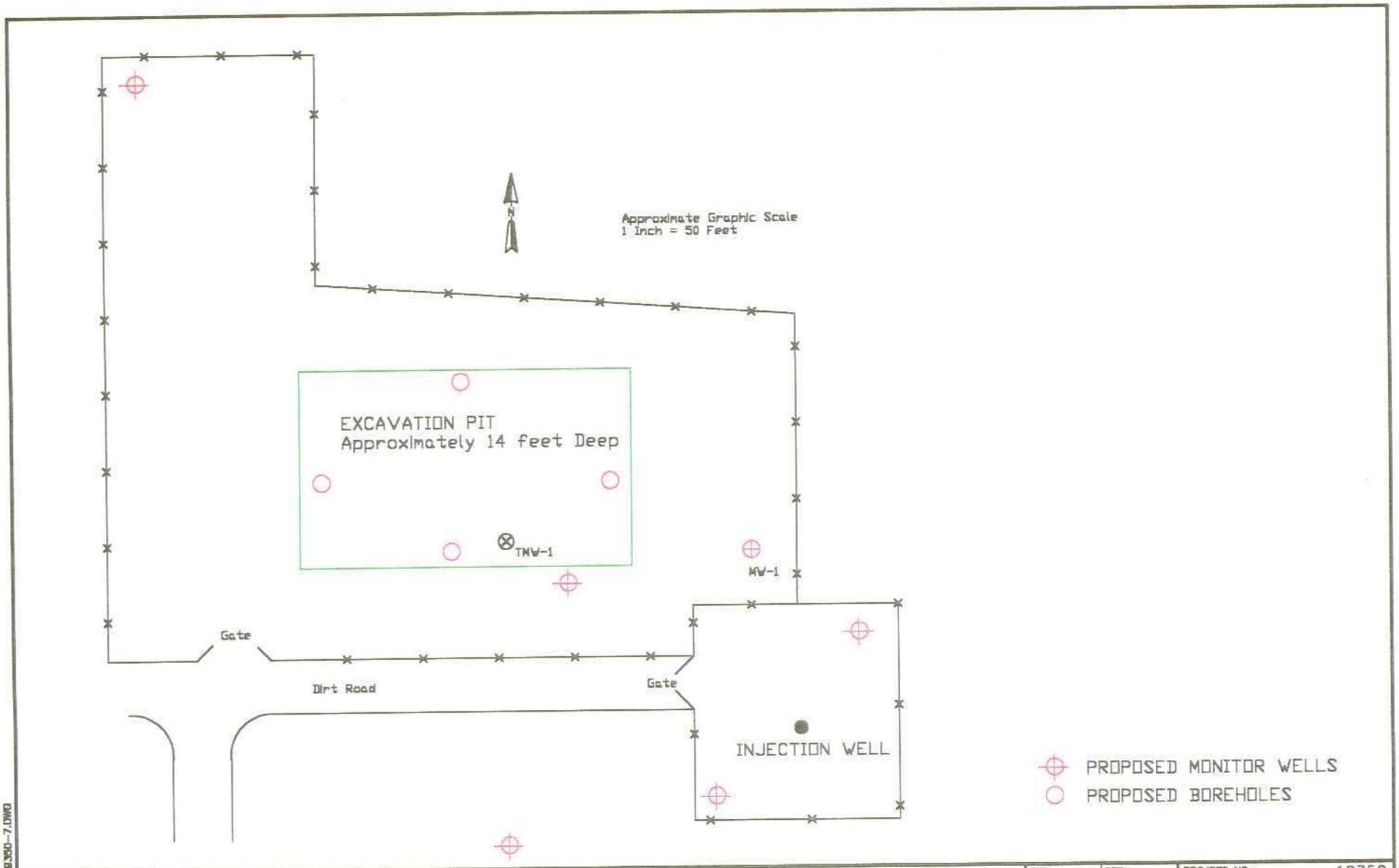
PSC

TITLE:

Shell Exploration & Technology Company
Westgate, Grimes, Tasker Stage 1 Abatement Workplan
Proposed Borehole Location

DWN:	DES.:	PROJECT NO.: 19350
ko	seh	Grimes & Tasker Hobbs, New Mexico
CHKD:	APPD:	
seh	seh	
DATE:	REV.:	FIGURE: 6
May 1998	1	

Projects\19350\19350-6.DWG



TITLE:

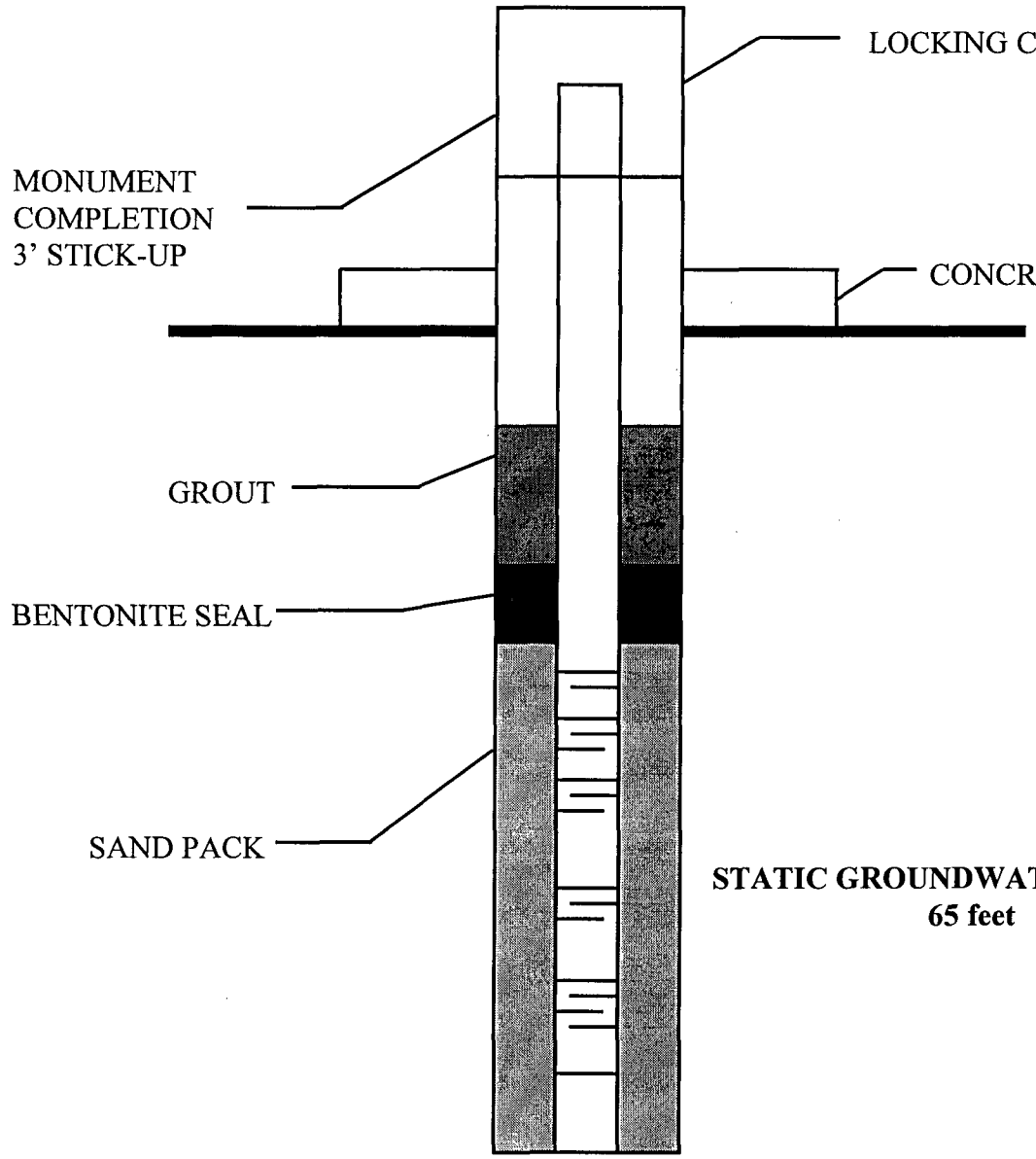
Shell Exploration & Technology Company
Westgate, Grimes, Takser Stage 1 Abatement Workplan
Proposed Monitor Well and Borehole Locations

DWN:	DES.: seh
CHKD: seh	APPD: seh
DATE: May 1998	REV.: 1

PROJECT NO.: 19350
Tasker Road
Hobbs, New Mexico

Figure 7

Projects\19350\19350-7.DWG



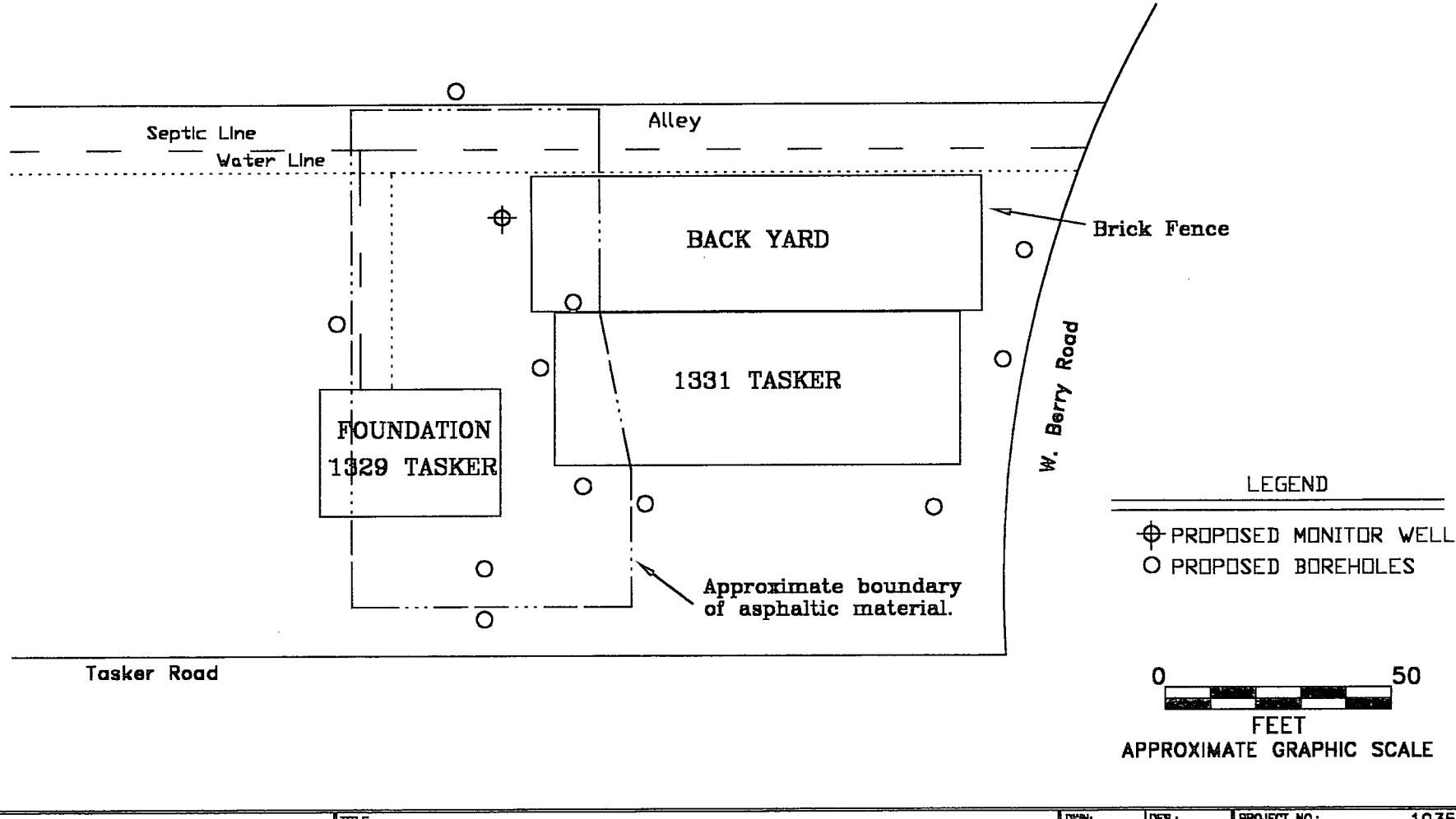
STATIC GROUNDWATER DEPTH:
65 feet

CASING TYPE: 4" SCH. 40 PVC
SCREEN TYPE: SCH. 40 PVC 0.020 SLOT
GRAVEL PACK: 08/16 VOLUME SILICA SAND

PHILIP SERVICES CORPORATION

Monitor Well Construction Diagram

FIGURE 8
SHELL GRIMES BATTERY
HOBBS, LEA COUNTY, NEW MEXICO
Project Number 18906



PSC

TITLE:
Shell Exploration & Technology Company
Westgate, grimes, Tasker Stage 1 Abatement Workplan
Proposed Monitor Well & Borehole Locations

DWN:	DES.: jwk	PROJECT NO.: 19350	
CHKD: seh	APPD: seh	Tasker Road Hobbs, New Mexico	
DATE: May 1998	REV.: 2	FIGURE: 9	

Projects\19350\19350-9.DWG

APPENDIX I

GRIMES BATTERY and TASKER ROAD STAGE 1 ABATEMENT WORKPLAN

April 1998

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Houston, Texas

Prepared by

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TABLE OF CONTENTS

1.0 INTRODUCTION

The subjects sites are located in west Hobbs, New Mexico. The Grimes site is a former tank battery location that was decommissioned in 1993. The Tasker site consists of two residential properties; one currently occupied and one under construction (**Figure 1**). Assessment activities were recently performed at each of the sites, and the results of the assessment activities were submitted to the New Mexico Oil Conservation Division (NMOCD).

2.0 SITE HISTORY

2.1 GRIMES BATTERY

The subject site is a former tank battery location on the Grimes Lease, currently operated by Altura Energy LTD. According to Altura Energy LTD's remediation workplan submitted for this property, the site has been in use as an oilfield tank battery since 1946. The tank battery was decommissioned in 1993. In September 1997, Altura Energy LTD. submitted a workplan for the remediation of oil impacted soil at the subject site. Following removal of tanks and equipment at the battery location, Altura Energy LTD. representatives excavated soils in an area that was suspected to have been a former emergency pit. Soils were excavated to a depth of approximately 14 feet below ground surface (bgs). A total of 4,259.58 cubic yards of soil were excavated and transported to Sundance Services, Inc., Parabo Disposal Facility located in Eunice, New Mexico. According to Altura Energy LTD. personnel, the soils were screened on-site for total petroleum hydrocarbons (TPH). Removal of these soils is likely to have removed a potential source of groundwater impacts.

Philip representatives were on-site December 5 and December 8, 1997, to oversee the installation of a temporary monitor well and monitor well at the former battery site (**Figure 2**).

The groundwater sample collected from temporary monitor well TMW-1 exhibited concentrations in excess of Human Health Standards for groundwater as outlined in New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2 (20 NMAC 6.2), section 3103 for benzene (0.044 mg/L), methylene chloride (0.110 mg/L) and phenols (0.14 mg/L). The 20 NMAC 6.2 Human Health Standards for these constituents are 0.01 mg/L, 0.10 mg/L, and 0.005 mg/L, respectively. Methylene chloride is a commonly used cleaning agent for the decontamination of laboratory equipment, and may have been detected as a result of laboratory procedures.

The groundwater sample collected from monitor well MW-1 exhibited a phenols concentration of 0.15 mg/L, which is in excess of the 20 NMAC 6.2 Human Health Standard of 0.005 mg/L.

No other analytes exhibited concentrations in excess of 20 NMAC 6.2 Human Health Standards in either of the groundwater samples. Of a total 83 compounds analyzed, 52 were not detected in the samples.

Analytical results and details of assessment activities can be found in the report prepared by Philip Services Corporation entitled *Grimes Battery Soil and Groundwater Assessment Report.*

2.2 TASKER ROAD

The subject site is located at 1331 and 1329 Tasker Road, Hobbs, New Mexico. The site consists of two residential properties; one currently occupied and one under construction. As a result of the construction activities, an asphalt-like layer was observed to be present at the site. The layer occurs at a depth of approximately one to two feet below ground surface (bgs) and varies in thickness from several inches to several feet across the properties. The asphalt-like substance appears to be oil that may have been spread on the ground under normal operating practices in the 1940's.

Shell representatives sampled the material in November 1997, and analyzed the samples for total petroleum hydrocarbons (TPH); benzene, toluene, ethylbenzene, and xylenes (BTEX); total chlorides, and TCLP metals.

Analysis of TCLP metals indicates that all constituents analyzed are below detection limits. Total chlorides were detected at a concentration of 128 milligrams per kilogram (mg/kg). Benzene, toluene, and ethylbenzene concentrations were below detection limits, and minor concentrations of total xylenes were detected at a concentration of 0.017 mg/kg. TPH compounds were analyzed using GC/MS scan to identify and quantify the analytes present in the sample, providing a chemical fingerprint of the compounds. Analytical results indicate the presence of n-Alkanes C13-C40. The chromatography exhibited characteristics described by the laboratory as those of weathered oil. The value for numerous branched alkanes and cyclic hydrocarbons (unresolved, 4122 mg/kg) are representative of USEPA Method 8015 analysis.

A subsurface investigation was performed by Philip representatives January 20 and 26, 1998. As approved by the NMOCD, the scope of the subsurface investigation was to collect two samples at each of five sample locations (**Figure 3**). The sample locations consisted of each of the four corners and the center of the suspected area of asphaltic material. The sample locations were selected based on the use of an aerial photograph and on accessibility of a backhoe. One sample was collected from the asphaltic material at a depth of approximately 1-2 feet bgs, and one sample was collected from soil beneath the asphaltic material at a depth of 5-6 feet bgs in each location.

Two soil samples were collected from each of five sample locations and submitted for analysis to Trace Analysis in Lubbock, Texas. The samples were analyzed for the compounds listed in 20 NMAC 6.2, sections 1101 and 3103 as requested by NMOCD.

No pesticides, chlorinated compounds, polycyclic aromatic hydrocarbons (PAHs), or semi-volatile compounds (SVOCs) were detected. With the exception of tetrachlorethane, ethylbenzene and m&p-xylenes, no volatile organic compounds were detected. Metals identified in the samples include barium, nickel, zinc, aluminum, iron, manganese, copper, cadmium,

selenium, and arsenic. Minor concentrations of radium 226 or radium 228 were detected in some of the samples.

TPH concentrations were detected in each of the samples and range from 1,800 mg/kg to 200,000 mg/kg. Ethylbenzene was detected in six of the ten samples at concentrations ranging from 0.1 mg/kg to 9.7 mg/kg. M&p-Xylenes were detected in six samples at concentrations ranging from 0.13 to 39 mg/kg. Tetrachloroethane was detected in sample SS-3, 5.5 feet at a concentration of 0.54 mg/kg.

Of a total of 1,790 compounds analyzed, 1,630 were not detected in the samples.

In addition to the sampling performed at this site, the area was trenched using a backhoe to identify the horizontal extent of the asphaltic material. The extent of asphaltic material as observed in the field is shown in **Figure 3.**

Analytical results and details of assessment activities can be found in the report prepared by Philip Services Corporation entitled *Tasker Road Site Assessment Report.*

3.0 STAGE 1 ABATEMENT WORKPLAN

The following Stage 1 Abatement Workplan is based on the results of the assessment activities performed to date, and addresses additional work requested by NMOCD in their letter dated March 23, 1998. In addition to the site activities described below, a one-mile radius water well inventory will be conducted for each site. The availability of original or quality aerial photographs will be investigated, and aerial photographs that can be easily interpreted will be provided if available. Furthermore, lease information will be provided in the final Stage 1 Abatement Report.

3.1 GRIMES BATTERY

Five boreholes will be installed in the area of the excavated pit. Proposed borehole locations are shown in **Figure 4**. The boreholes will be placed to identify if contaminant concentrations are present in the base and sidewalls of the pit excavation. The pit area has been partially filled with clean backfill material. No samples will be collected from the backfill material. When soils beneath the backfill are encountered, the soils will be sampled at five-foot intervals. Soil samples will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. Drilling and sampling will continue until no PID readings, staining, and odor are observed. The sample exhibiting the highest PID reading and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and xylenes (BTEX), and chlorides. In the event that PID

readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis.

Two monitor wells will be installed in the pit area in order to identify the groundwater gradient at the site and identify the downgradient extent of groundwater impacts. One monitor well will be installed northwest of the pit (assumed to be upgradient) and one monitor well will be installed southeast of existing monitor well MW-1 (assumed to be downgradient). Proposed monitor well locations are shown in **Figure 4**. Soil samples at five-foot intervals will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. The sample exhibiting the highest PID reading and the sample collected from the interval where groundwater is encountered will be submitted for laboratory analysis for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and xylenes (BTEX), and chlorides.

A groundwater sample from each of the monitor wells and from MW-1 will be collected and submitted for analysis for compounds listed in New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2, sections 3103 and 1101 (20 NMAC 6.2 3103 and 1101) as requested by the NMOCD.

NMOCD has requested that permanent monitoring wells be installed in the pit area in order to monitor groundwater constituent concentrations in the source area. Proposed locations for the requested monitoring wells will be submitted to NMOCD based on the results of this proposed Stage 1 Abatement Workplan. Monitor well locations will be selected in conjunction with remedial design.

Additionally, the area north of the tank battery where stained soils were observed by a NMOCD representative will be sampled. The stained soils will be trenched using a backhoe or other equipment and a representative soil sample will be screened in the field for naturally occurring radioactive material (NORM) and submitted for analysis for compounds listed in 20 NMAC 6.2 3103 and 1101. Further delineation of this area will be conducted, if necessary, based on the analytical results.

3.2 TASKER ROAD

Four boreholes will be installed at the Tasker Road site in order to identify the horizontal and vertical extent of hydrocarbon impacts. The proposed borehole locations are shown in **Figure 5**. The locations have been selected based on field observation of the edge of the asphaltic material. The soils will be sampled at five-foot intervals. Soil samples will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. Drilling and sampling will continue until no PID readings, staining, and odor are observed. The sample exhibiting the highest PID reading and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for TPH and for the compounds listed in 20 NMAC 6.2 3103 and 1101. In the event that PID

readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis

In addition to the identification of the extent of hydrocarbon impacts described above, soils will be sampled using an auger, trenching, or excavating equipment as near to the foundation of the occupied residence as practicable. Three proposed sample locations are shown in **Figure 5** and will be sampled at a depth of 2-3 feet below ground surface to determine if the asphaltic material is present. The samples will be submitted for laboratory analysis for TPH and for the compounds listed in 20 NMAC 6.2 3103 and 1101.

One monitor well will be installed to identify if groundwater has been impacted at the site. The monitor well will be installed at the location shown in **Figure 5.** Soil samples at five-foot intervals will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. The sample exhibiting the highest PID reading and the sample collected from the interval where groundwater is encountered will be submitted for laboratory analysis for the compounds listed in 20 NMAC 6.2 3103 and 1101.

Additional monitor wells will be installed, if necessary, to identify the extent of groundwater impacts based on the results of this Stage 1 Abatement Workplan.

Two background samples will be collected from a depth of three feet below ground surface. One will be collected from west of the alley, and one will be collected from east of the alley (**Figure 5**). The sample will be analyzed for metals to identify background concentrations in native soils in this area.

As requested by the NMOCD, detection of metals and napthalenes's by the NMOCD's laboratory in soil samples collected at sample locations SS-1 and SS-2 will be addressed with the results of this Stage 1 Abatement Workplan. Following completion of these Stage 1 Abatement Workplan activities, a report of field activities and results will be submitted to NMOCD. The report will include recommendations for further Stage 1 activities or a Stage 2 Abatement Workplan based on assessment results from this and previous work, including constituent concentrations detected by NMOCD's laboratory and a table comparing detection limits of the laboratories that performed the analysis. Shell requests that the NMOCD indicate in their response to this workplan the acceptable detection limit for each compound to be analyzed, and Shell will contract a laboratory to meet the detection limit requirements.

4.0 QUALITY ASSURANCE

All sampling and analysis will be performed consistent with the standards outlined in 20 NMAC 6.3107 B.

5.0 SCHEDULE

Field activities will be scheduled following written approval of the Stage 1 Abatement Workplan by the NMOCD. Field activities will be initiated immediately, subject to the availability of a qualified and experienced driller. It is anticipated that field activities will require a minimum of 10 work days. In order to minimize the noise disturbance to area residents, field activities will be scheduled Monday through Friday, 8:00 am - 5:00 pm. The results of the Stage 1 Abatement Workplan and recommendations for remediation of the sites will be submitted within 60 days of the completion of field activities. This will allow sufficient time for laboratory analysis, evaluation of the data, and remedial design.

6.0 REFERENCES

Grimes Battery Soil and Groundwater Assessment Report; Philip Services Corporation; February, 1998

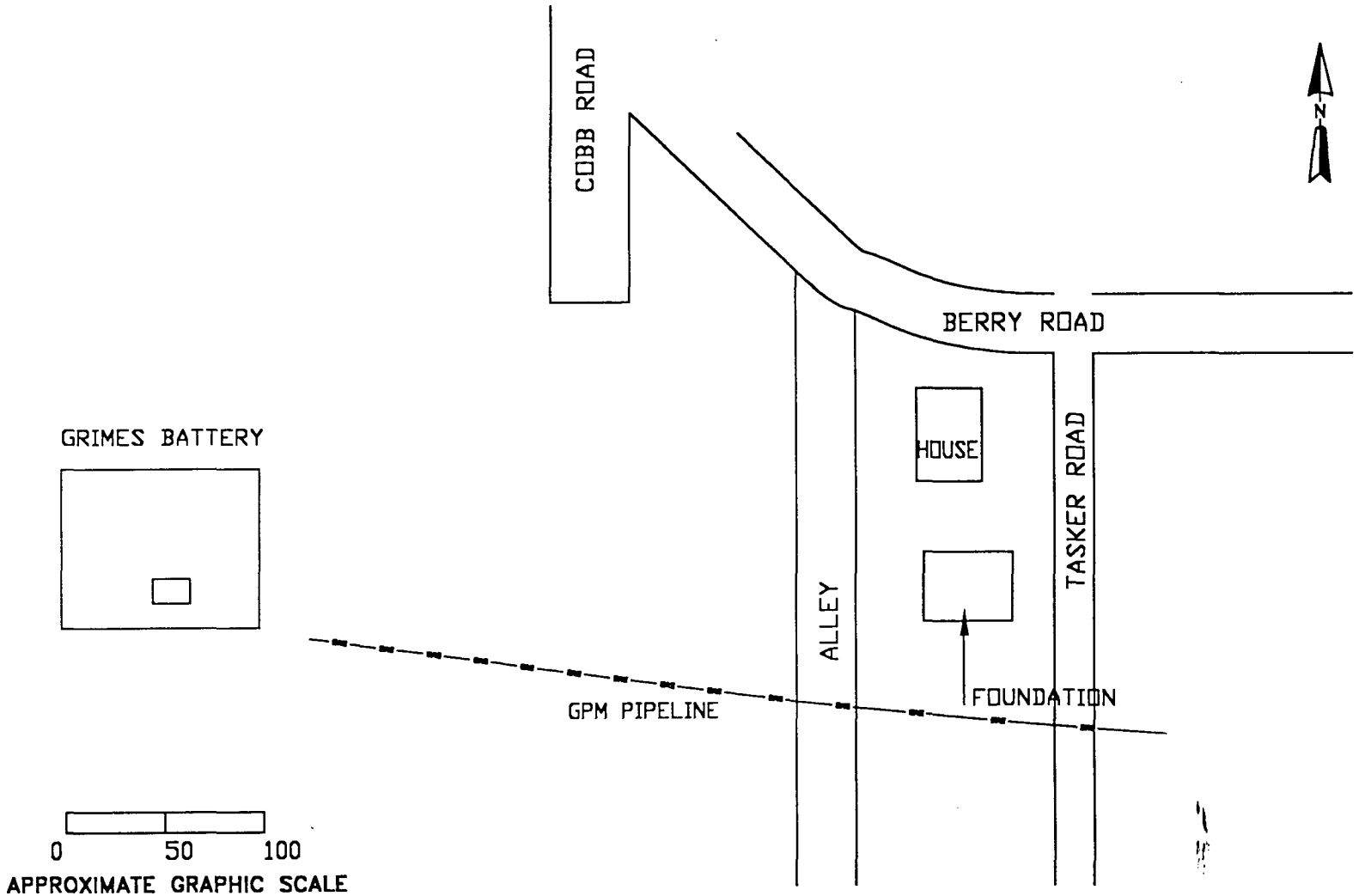
Groundwater Handbook; United States Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information; 1992

Hydrology and Hydrochemistry of the Ogallala Aquifer, Southern High Plains, Texas Panhandle and Eastern New Mexico; Report Number 177; Bureau of Economic Geology; 1988

Hydrogeochemistry and Water Resources of the Lower Dockum Group in the Texas Panhandle and Eastern New Mexico; Report Number 161: Bureau of Economic Geology; 1986

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart I

Tasker Road Site Assessment Report; Philip Services Corporation; February, 1998



PHILLIPS SERVICES CORP.

TITLE:
SHELL EXPLORATION & TECHNOLOGY COMPANY
GRIMES & TASKER
HOBBS, NEW MEXICO

DWN:	DES.: SEH
CHKD: SEH	APPD: SEH
DATE: APR. 1998	REV.: 3

PROJECT NO.: GRIMES & TASKER Hobbs, NM

FIGURE: 1

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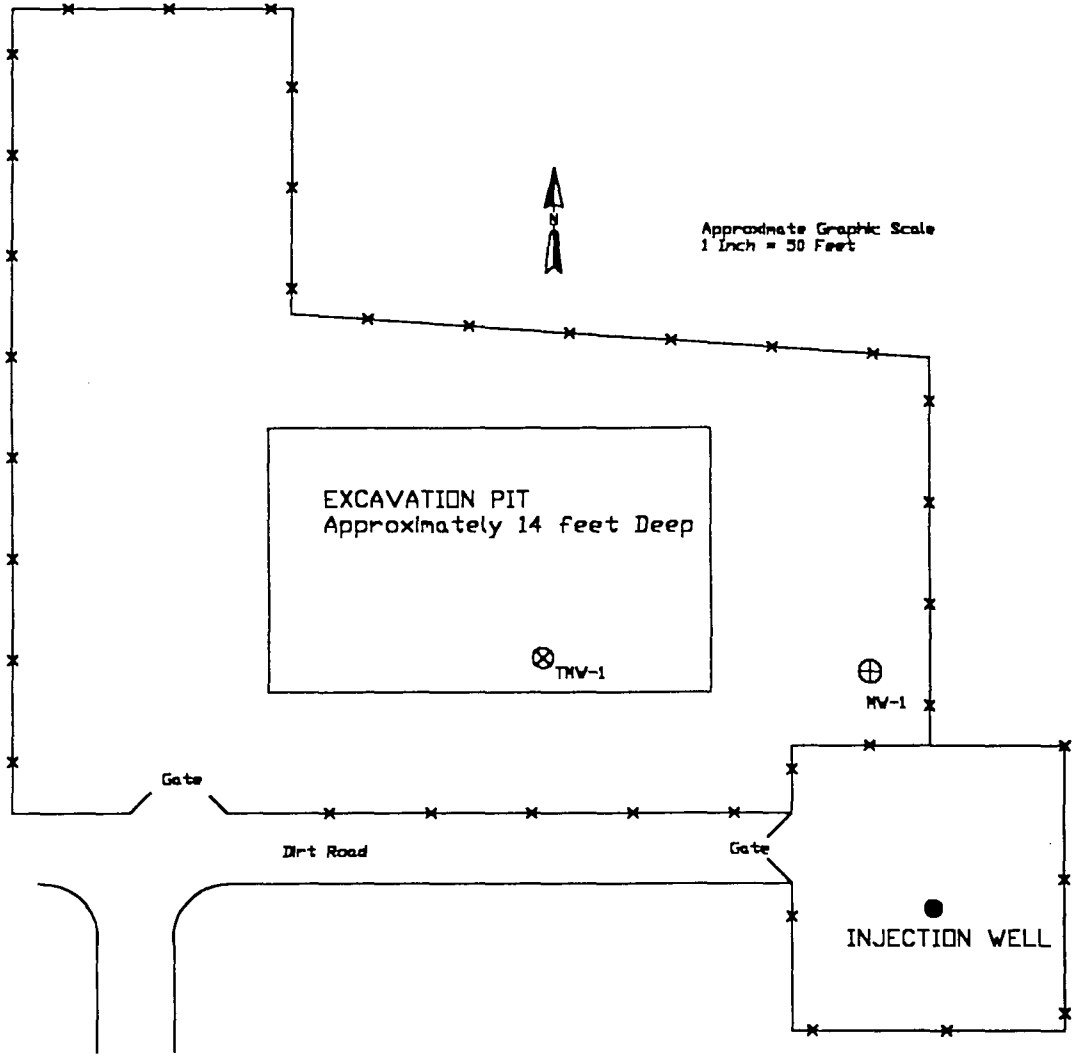

PSC

TITLE:
SHELL EXPLORATION & TECHNOLOGY COMPANY
GRIMES BATTERY
MONITOR WELL LOCATIONS

DWN:	DES.: seh
CHKD: seh	APPD: seh
DATE: Mar. 1998	REV.: 4

PROJECT NO.: 19349
GRIMES & TASKER
Hobbs, NM

FIGURE: 2

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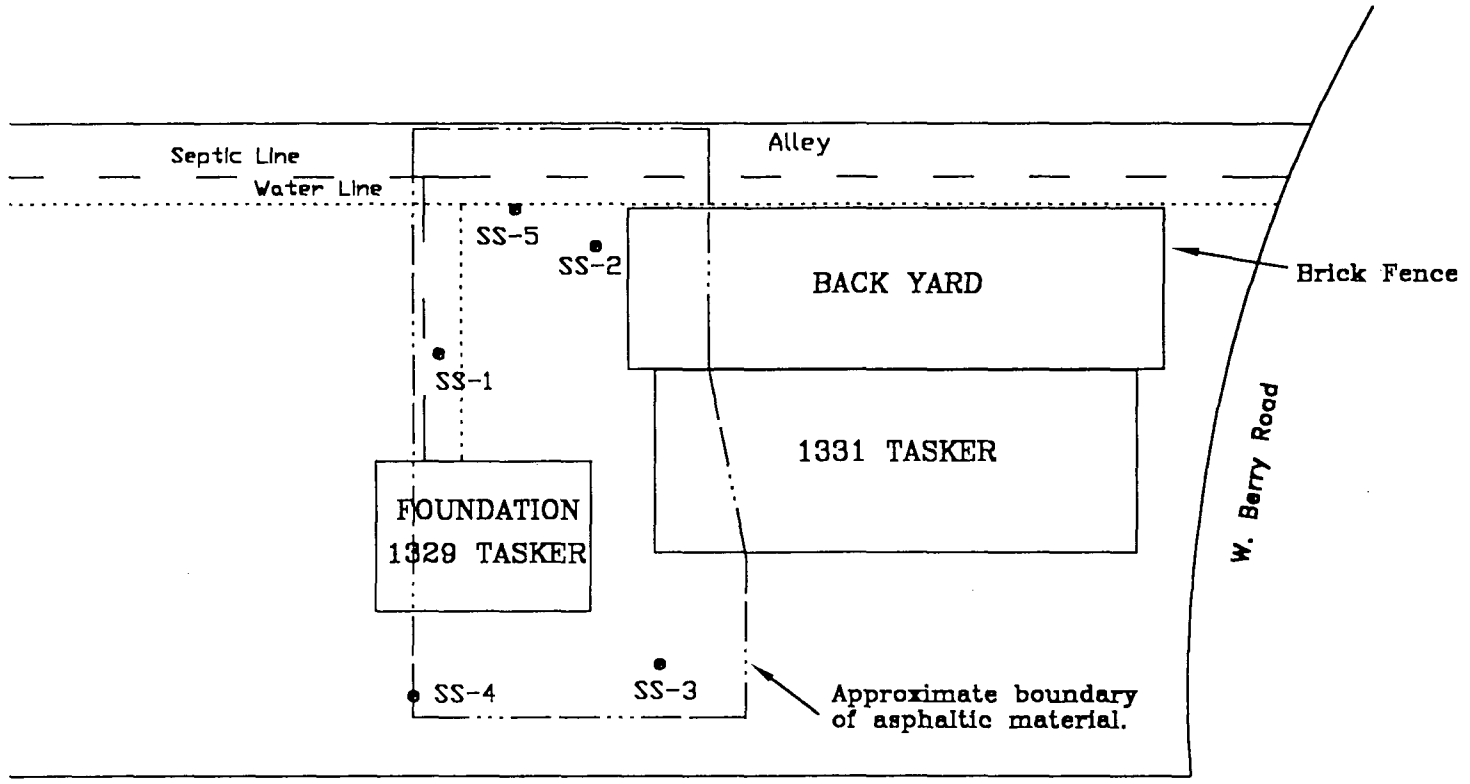

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FEET

APPROXIMATE GRAPHIC SCALE

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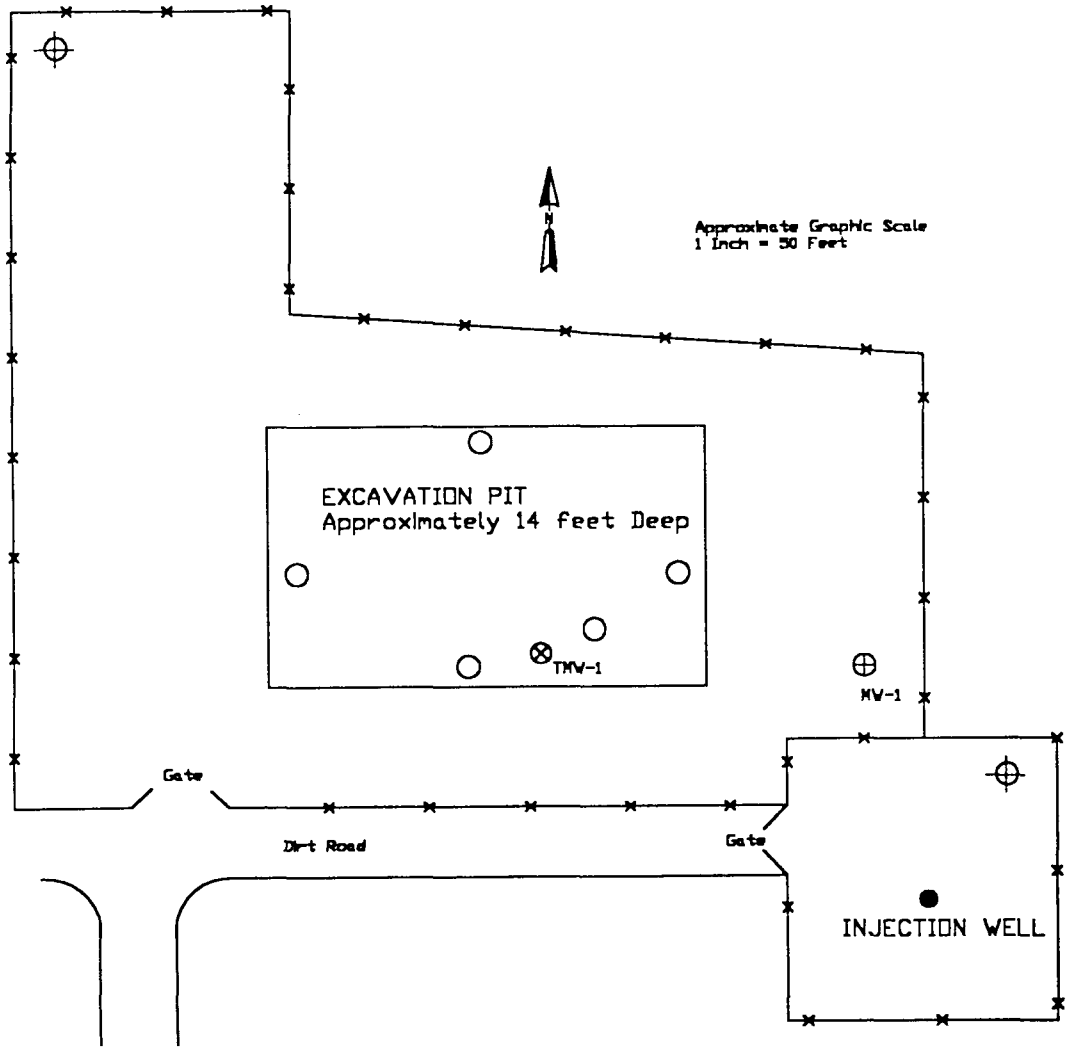
PSC

TITLE:

SHELL EXPLORATION & TECHNOLOGY COMPANY
TASKER ROAD
VISIBLE EXTENT OF ASPHALTIC MATERIAL

DWN:	DES.:	PROJECT NO.: 19350
koa	jwk	TASKER ROAD Hobbs, New Mexico
CHKD:	APPD:	
seh	seh	
DATE:	REV.:	FIGURE 3
Jan 1998	2	



PSC

TITLE:

SHELL EXPLORATION & TECHNOLOGY COMPANY
GRIMES BATTERY
Proposed Monitor Well & Borehole Locations

DWN:	DES.: seh	PROJECT NO.: 19350
CHKD: seh	APPD: seh	TASKER ROAD Hobbs, NM
DATE: Mar. 1998	REV.: 5	FIGURE: 4

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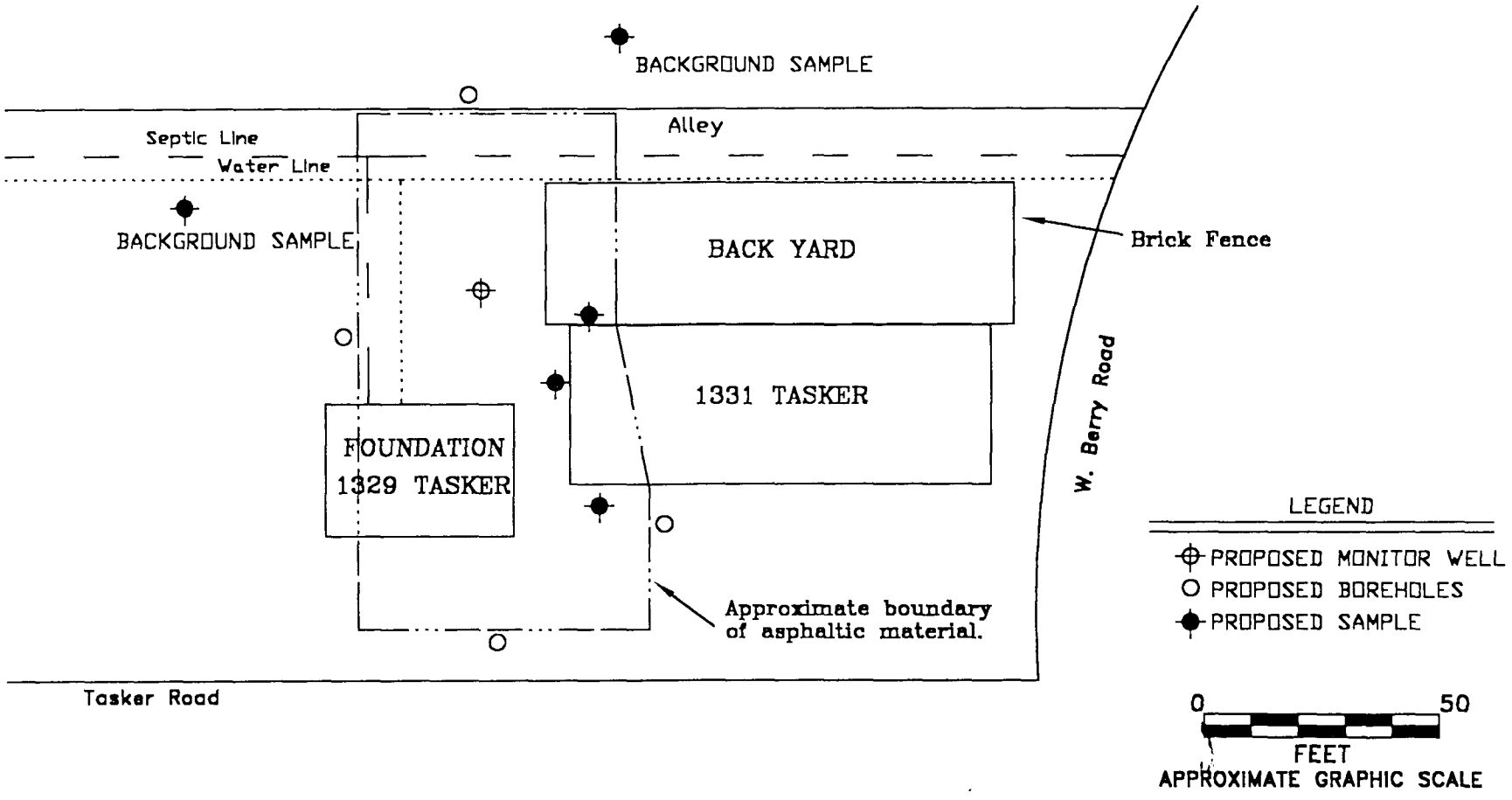

PSC

TITLE:
SHELL EXPLORATION & TECHNOLOGY COMPANY
TASKER ROAD
PROPOSED SAMPLE LOCATIONS

DWN:	DES.:	PROJECT NO.: 19350
koa	jwk	TASKER ROAD Hobbs, New Mexico
CHKD:	APPD:	
seh	seh	
DATE:	REV.:	FIGURE 5
Jan 1998	2	

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GRIMES BATTERY and TASKER ROAD STAGE 1 ABATEMENT WORK PLAN ADDENDUM

April 1998

Shell Exploration and Production Technology Company Houston, Texas

Prepared by

1324 W. Marland Blvd.
Hobbs, New Mexico 88240

TABLE OF CONTENTS

1.0 STAGE 1 ABATEMENT WORK PLAN ADDENDUM

The following Stage 1 Abatement Work plan Addendum is based on the results of the assessment activities performed to date, the activities addressed in the Stage 1 Abatement Work plan of April 24, 1998, and the forwardness of Shell Exploration and Production Technology Company to voluntarily conduct a complete survey of the surrounding undeveloped properties to the two sites under study. A survey to determine the property boundaries of the undeveloped land owned by Los Quatro, Inc. will be conducted along with a study of aerial photographs, oil and gas production well maps, and a complete walk over of the site.

There are primarily four tracts of land undeveloped in the Westgate Addition (Figure 1). The Grimes Battery and Tasker Road sites are located within Tracts 1 and 2. Additional small parcels of land to be investigated are located at the southeast corner of Tasker Drive and the north end of Cobb Drive.

1.1 TRACT 1 (TASKER ROAD SITE)

Two boreholes will be installed in addition to the ones already proposed in the Stage 1 Abatement Work plan (4/24/98). Proposed borehole locations are shown in Figure 1. The boreholes will be placed to identify if contaminant concentrations are present. The soils will be sampled to a depth of 10 feet, with samples taken at 5 foot intervals. Soil samples will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. In the event that staining or odor is encountered at the 10 foot depth, drilling and sampling will continue until no PID readings, staining, and odor are observed. The sample exhibiting the highest PID reading and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX). In the event that PID readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis.

1.2 TRACT 2 (GRIMES BATTERY SITE)

Two boreholes will be installed in addition to the ones already proposed in the Stage 1 Abatement Work plan (4/24/98). Proposed borehole locations are shown in Figure 1. The boreholes will be placed to identify if contaminant concentrations are present. The soils will be sampled to a depth of 10 feet, with samples taken at 5 foot intervals. Soil samples will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. In the event that staining or odor is encountered at the 10 foot depth, drilling and sampling will continue until no PID readings, staining, and odor are observed. The sample exhibiting the highest PID reading and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for total petroleum hydrocarbons

(TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX). In the event that PID readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis.

1.3 TRACT 3

Six boreholes will be installed. Proposed borehole locations are shown in Figure 1. The boreholes will be placed to identify if contaminant concentrations are present. The soils will be sampled to a depth of 10 feet, with samples taken at 5 foot intervals. Soil samples will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. In the event that staining or odor is encountered at the 10 foot depth, drilling and sampling will continue until no PID readings, staining, and odor are observed. The sample exhibiting the highest PID reading and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX). In the event that PID readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis.

1.4 TRACT 4

Four boreholes will be installed. Proposed borehole locations are shown in Figure 1. The boreholes will be placed to identify if contaminant concentrations are present. The soils will be sampled to a depth of 10 feet, with samples taken at 5 foot intervals. Soil samples will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. In the event that staining or odor is encountered at the 10 foot depth, drilling and sampling will continue until no PID readings, staining, and odor are observed. The sample exhibiting the highest PID reading and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX). In the event that PID readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis.

1.5 ADDITIONAL BOREHOLES

Two additional boreholes will be installed at the northern end of Cobb Drive on both the east and west sides on empty lots and one borehole on the empty lot at the southeast corner of Tasker Drive. Proposed borehole locations are shown in Figure 1. The boreholes will be placed to identify if contaminant concentrations are present. The soils will be sampled to a depth of 10 feet, with samples taken at 5 foot intervals. Soil samples will be screened in the field for volatile organic compounds (VOC's) using a photoionization detector (PID), and will be inspected for the presence of staining or odor. In the event that staining or odor is encountered at the 10 foot depth, drilling and sampling will continue until no PID readings, staining, and odor are observed.

The sample exhibiting the highest PID reading and the sample collected from the bottom of the borehole will be submitted for laboratory analysis for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX). In the event that PID readings do not coincide with visual observation of staining, one representative composite sample of stained material will be collected and submitted for analysis.

2.0 QUALITY ASSURANCE

All sampling and analysis will be performed consistent with the standards of EPA protocols.

3.0 SCHEDULE

Field activities will be scheduled following written approval of the Stage 1 Abatement Work Plan by the NMOCD. Field activities will be initiated immediately, subject to the availability of a qualified and experienced driller. It is anticipated that field activities will require a minimum of 10 work days. In order to minimize the noise disturbance to area residents, field activities will be scheduled Monday through Friday, 8:00 am - 5:00 pm. The results of the Stage 1 Abatement Work Plan and recommendations for remediation of the tracts, if necessary, will be submitted within 60 days of the completion of field activities. This will allow sufficient time for laboratory analysis, evaluation of the data, and remedial design.

4.0 REFERENCES

Grimes Battery and Tasker Road Stage 1 Abatement Work Plan; Philip Services Corporation; April 1998

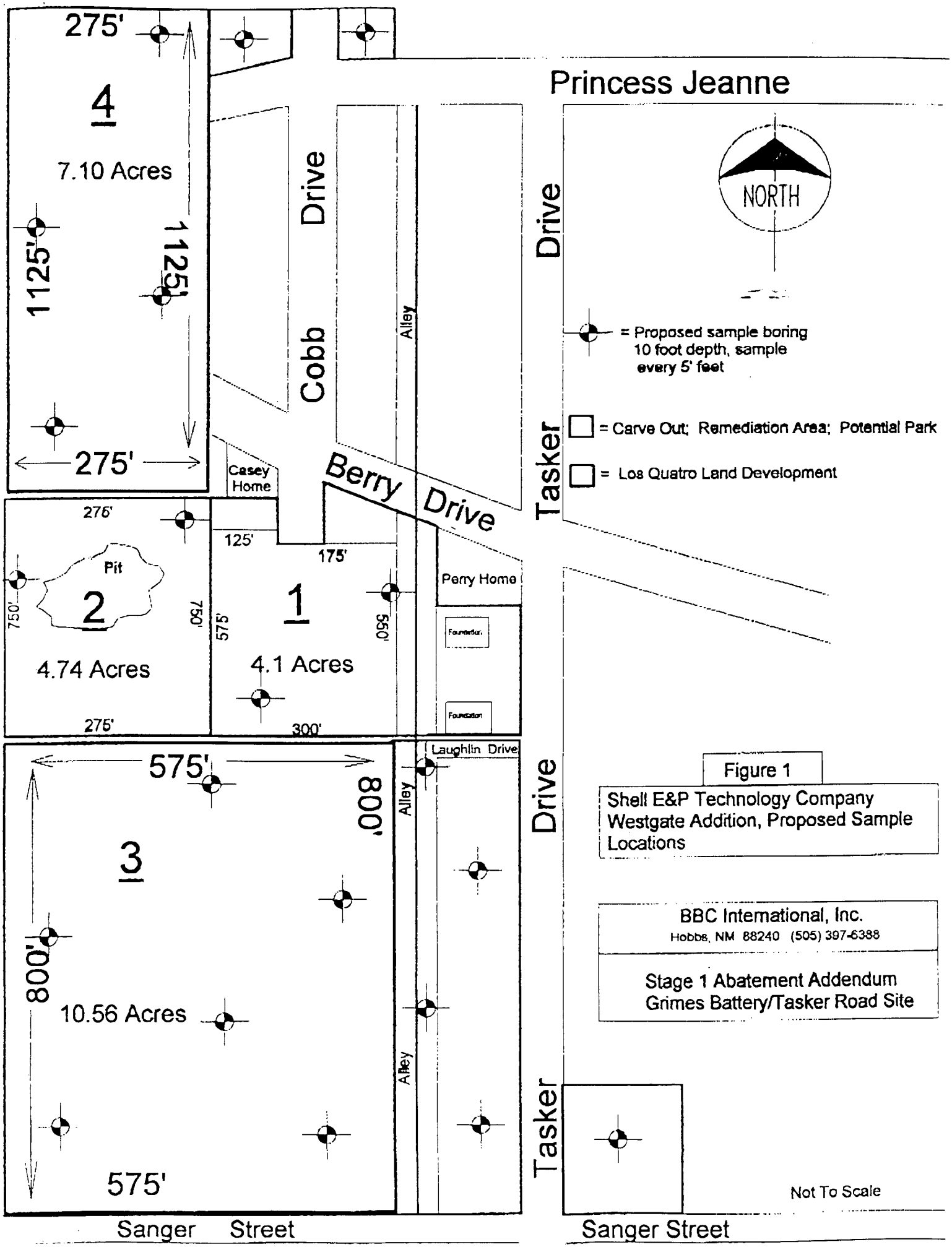


Figure 1

Shell E&P Technology Company
Westgate Addition, Proposed Sample Locations

BBC International, Inc.
Hobbs, NM 88240 (505) 397-6388

Stage 1 Abatement Addendum
Grimes Battery/Tasker Road Site

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

May 1, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-235-437-265

Mr. Wayne A. Hamilton
Shell E&P Technology Company
P.O. Box 481
Houston, Texas 77001-0481

RE: STAGE 1 ABATEMENT WORK PLAN
GRIMES LEASE
HOBBS, NEW MEXICO

Dear Mr. Hamilton:

The New Mexico Oil Conservation Division (OCD) has reviewed Shell E&P Technology Company's (SHELL) April 1998 "GRIMES BATTERY AND TASKER ROAD STAGE 1 ABATEMENT WORK PLAN" and April 28, 1998 "GRIMES BATTERY, TASKER ROAD, HOBBS, NM, STAGE 1 ABATEMENT WORK PLAN ADDENDUM". These documents contain SHELL's Stage 1 Abatement Plan Proposal for investigating the magnitude and extent of contamination related to a former unlined pit located in the Westgate residential subdivision at 1329 Tasker Road Hobbs, New Mexico and a former unlined pit at the adjacent Grimes Tank Battery.

Upon a review of the above referenced documents, the OCD has the following comments and requirements:

A. Westgate Subdivision

As you are aware a number of residents in the Westgate Subdivision have complained of adverse health effects as a result of oil field activities on the Grimes Lease. In order to effectively evaluate potential health threats to residents of the subdivision from the Grimes Lease, the OCD requires that the Stage 1 Abatement Plan Proposal include:

1. A map showing all oil and gas lease holders within 1 mile of the Grimes Tank Battery.

2. A map showing the location of all existing and plugged and abandoned oil and gas wells within 1 mile of the Grimes Tank Battery.

3. All available aerial photographs of the Grimes Lease spanning the time period during which the lease has been operable.

4. A plan for conducting an area wide soil gas survey of the subdivision.

A. Grimes Battery Pit

1. The investigation of the area north of the tank battery needs to include investigation of the dense hydrocarbon layer in the soil approximately 1 foot below the surface within the backyard of the Casey residence. The OCD observed this contamination area during an April 8, 1998 site inspection. Please provide a plan for investigation of this area.

2. The plan recommends investigating the area north of the tank battery where the OCD observed stained soils and paraffins on the ground surface. However, the plan does not specify the proposed soil intervals from which samples will be taken. Please provide this information.

3. The borehole pit sampling needs to include sampling of soils 2-3 feet below the surface of the excavated area in order to assess the final contaminant concentrations remaining in the base of the excavation. In addition, the 2-3 foot borehole soil samples needs to include analysis for all of the compounds listed in the New Mexico Water Quality Control Commission (WQCC) standards of sections 1101 and 3103, NMAC 6.2. Please provide a commitment to perform this sampling.

4. The OCD requires that total petroleum hydrocarbons (TPH) in soils from the boreholes be analyzed using EPA method 418.1 to get a conservative quantification of TPH in soil. Please provide a commitment to perform this sampling.

5. All boreholes need to be plugged from total depth to the surface with a cement grout containing 3-5% bentonite.

6. The plan defers installation of source area monitor wells until the remedial design phase of the project. The OCD requires that source area wells be installed during Stage 1 investigations. Please provide a plan for installation of source area monitor wells.

7. The OCD requires that 2 additional ground water monitoring wells be installed in the locations shown on Figure 4 (attached) to determine the extent of ground water contamination. Please provide a commitment to install these wells.

8. The plan does not contain the proposed monitor well construction details. Please provide this infomation.

B. Tasker Road Pit

1. In order to adequately determine the lateral and vertical extent of soil contamination from the pit, the borehole and monitor well soil sampling plan needs to include sampling of soils from the 2-3 foot and 5 foot interval below the surface in addition to the sample intervals proposed. Please provide a commitment to perform this sampling.

2. The OCD requires that the pit monitor well be installed at the location of former soil sample location SS-2.

3. The OCD requires that an additional borehole be drilled at the location shown on Figure 5 (attached) in order to fully characterise the vertical extent of contamination in the pit.

4. The OCD believes that trenching is not an appropriate method for sampling volatile organics in soils at the proposed sampling locations adjacent to the Perry residence. In addition, the OCD requires that samples from each of these 3 locations also include soil samples from the 5 and 10 foot depth intervals. Please provide an alternate method for insitu sampling of soils from these locations and a commitment to collect the additional soil samples.

5. The OCD requires that the soil sample locations for determining background metals concentrations in soils be located upgradient of both the Grimes Tank Battery and the Tasker Road pit. Please provide an alternate location for determining background soil metals concentrations.

6. The OCD requires that Shell provide a site health and safety plan for the activities to be conducted in association with the Tasker Road Pit, the Grimes Tank Battery Pit and the Westgate Subdivision.

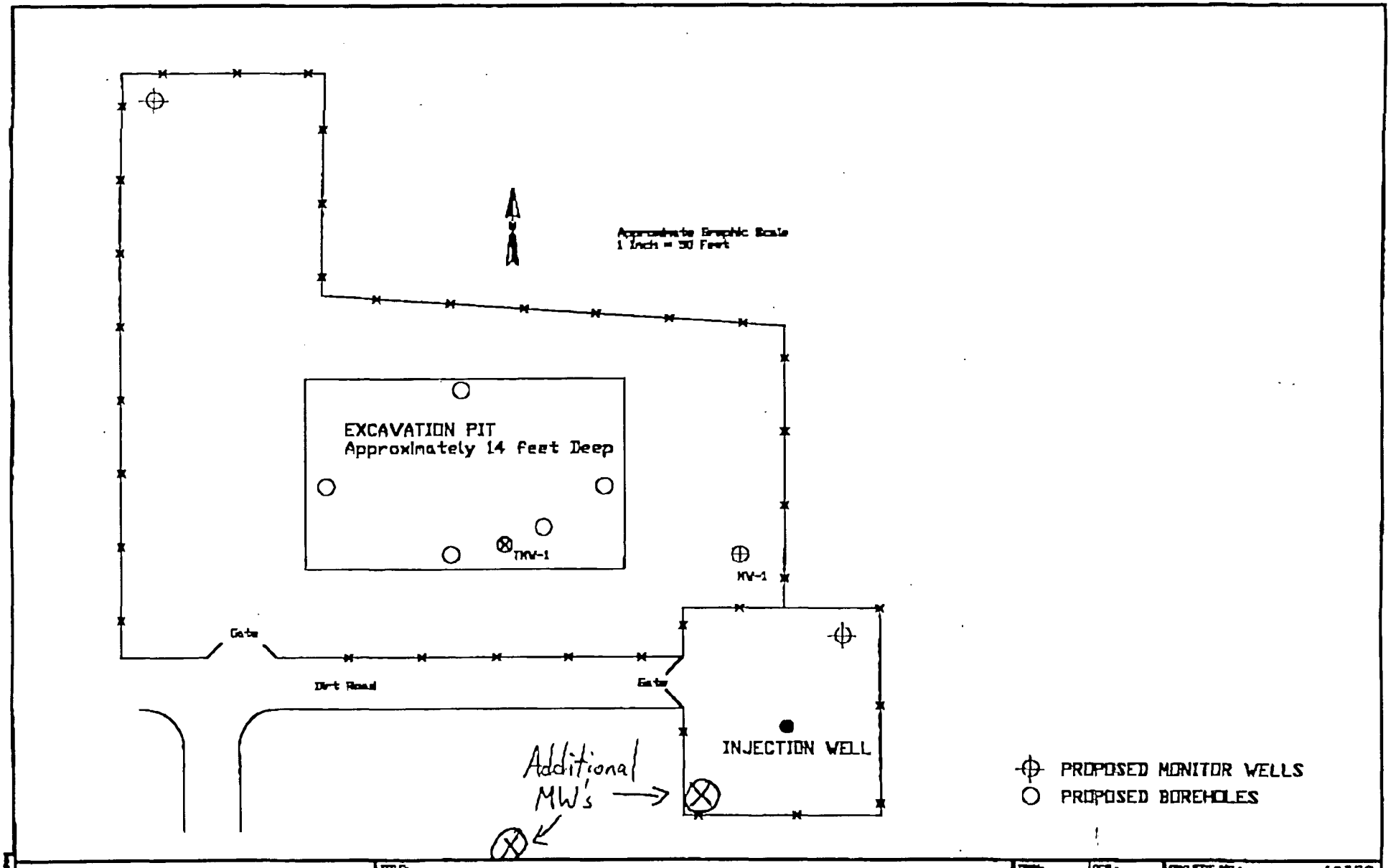
The OCD requires that SHELL submit a 2nd draft of the Stage 1 abatement plan proposal which incorporates the above requirements. The 2nd draft will be submitted to the OCD Santa Fe Office by May 18, 1998 with a copy provided to the OCD Hobbs District Office.

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

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

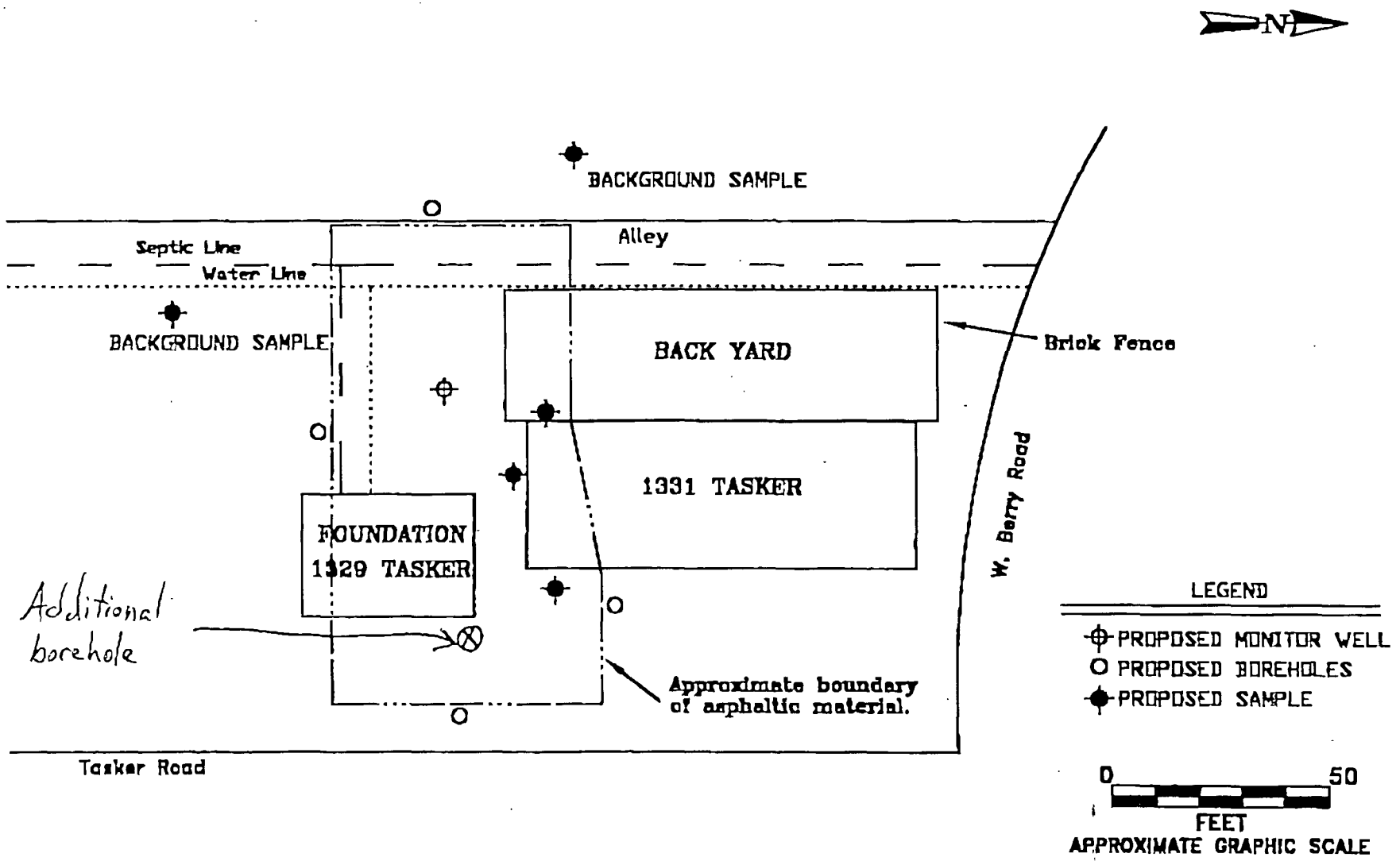
xc: Jennifer A. Salisbury, Secretary, NM Energy. Minerals and Natural Resources Department
Lori Wrotenbery, Director, OCD
Chris Williams, OCD Hobbs District Supervisor
Randy Merker, Office of Epidemiology, NM Health Department
Jose Jaques, Westgate Subdivision



PSC

TITLE:
SHELL EXPLORATION & TECHNOLOGY COMPANY
GRIMES BATTERY
Proposed Monitor Well & Borehole Locations

DWN:	DES: seh	PROJECT NO.: 19350	
CHK: seh	APP: seh	TASKER ROAD Hobbs, NM	
DATE: Mar. 1998	REV: 5	FIGURE: 4	



PSC

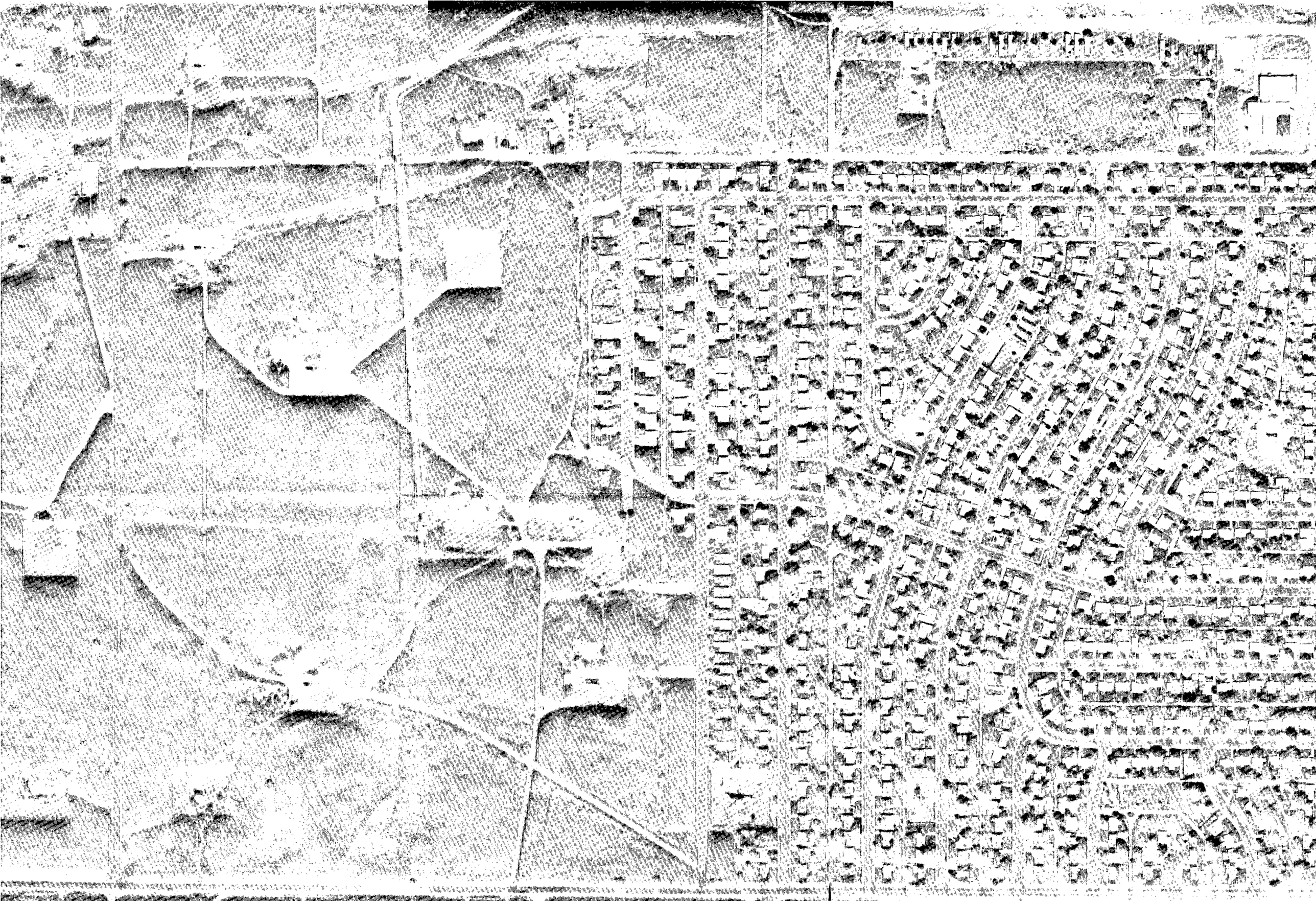
TITLE:
SHELL EXPLORATION & TECHNOLOGY COMPANY
TASKER ROAD
PROPOSED SAMPLE LOCATIONS

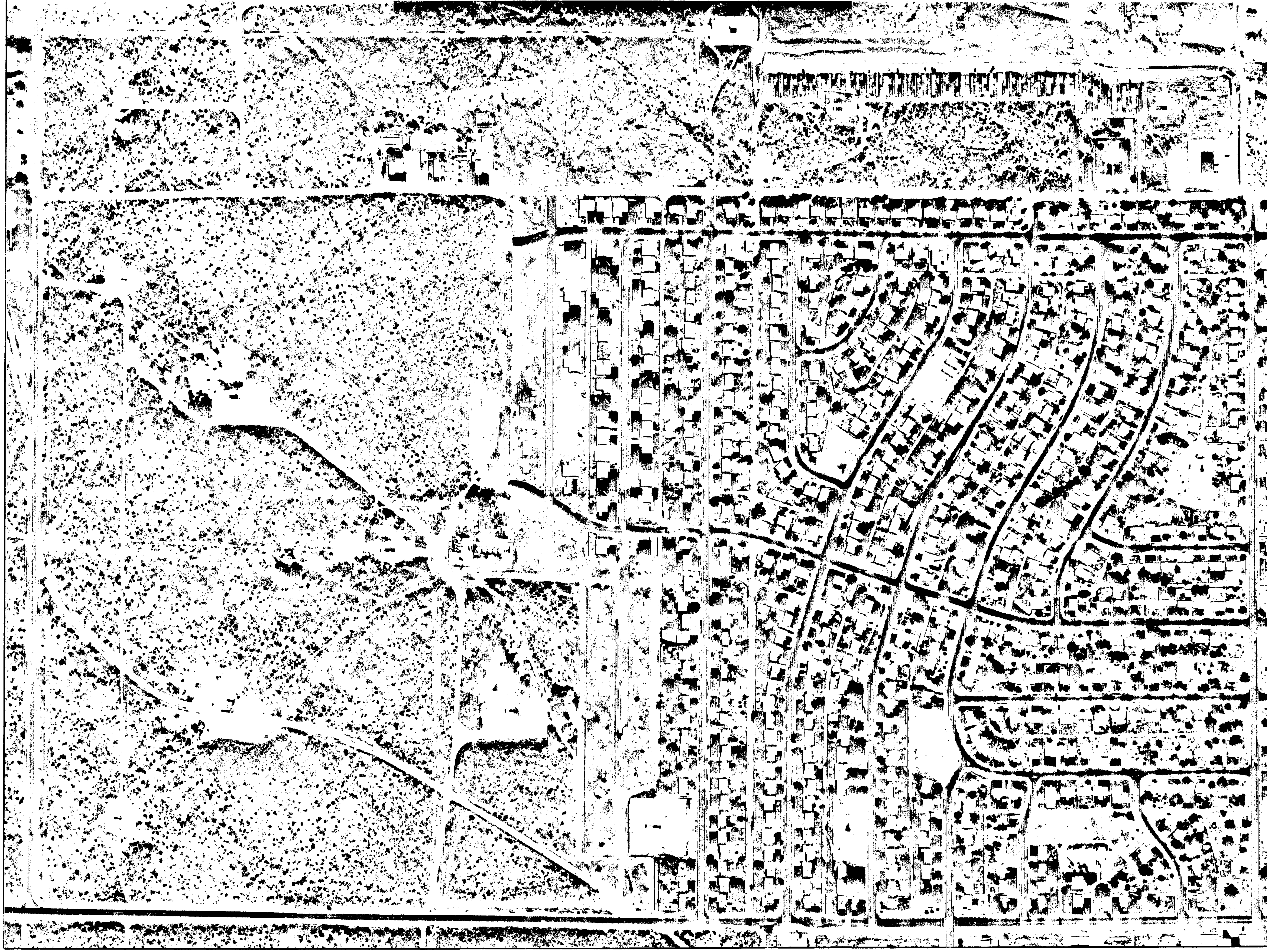
DRWN:	DES'D:
koa	jwk
CHK'D:	APP'D:
seh	seh
DATE:	REV.:
Jan 1998	2

PROJECT NO.: 19350
TASKER ROAD
Hobbs, New Mexico

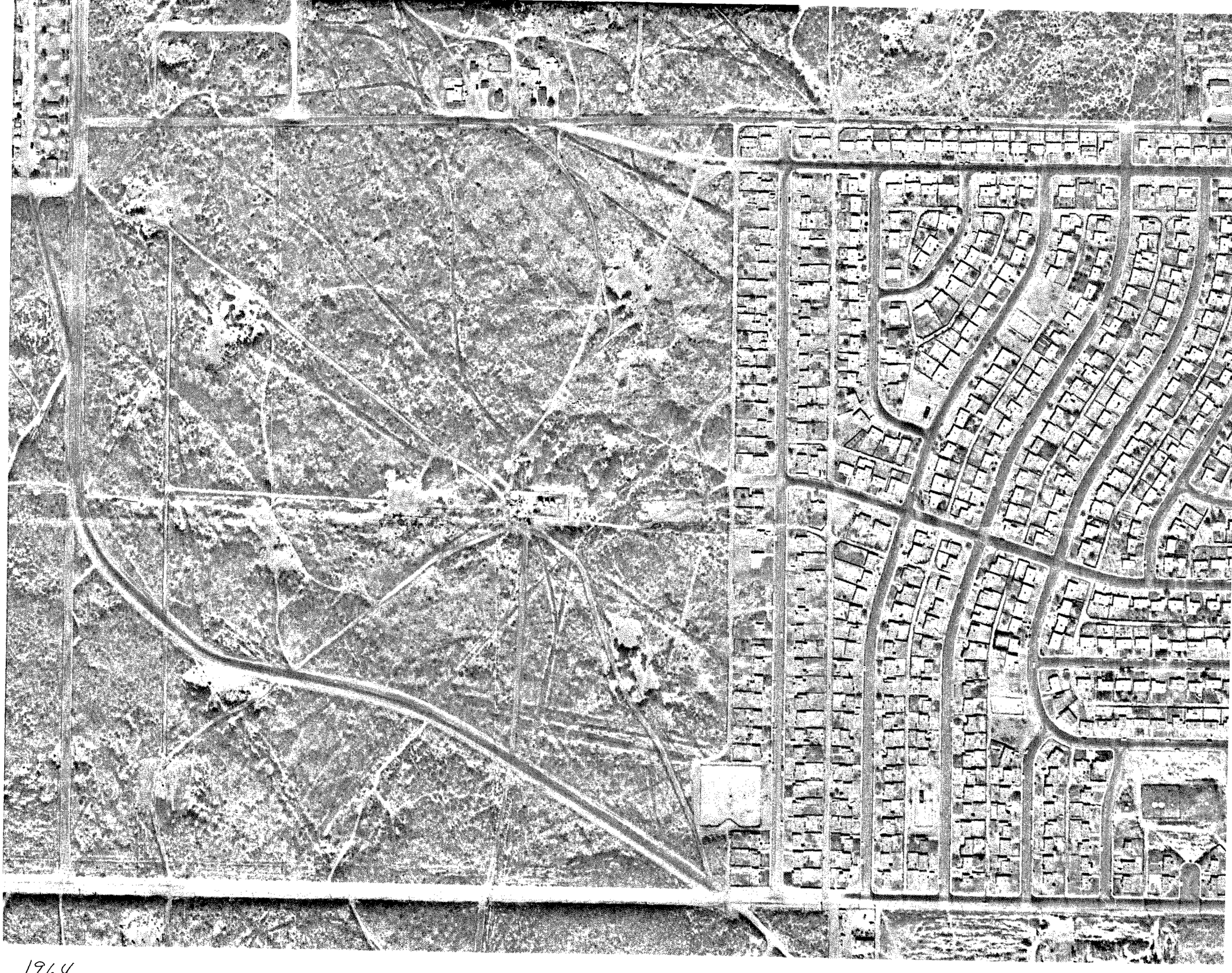
FIGURE 5

APPENDIX II

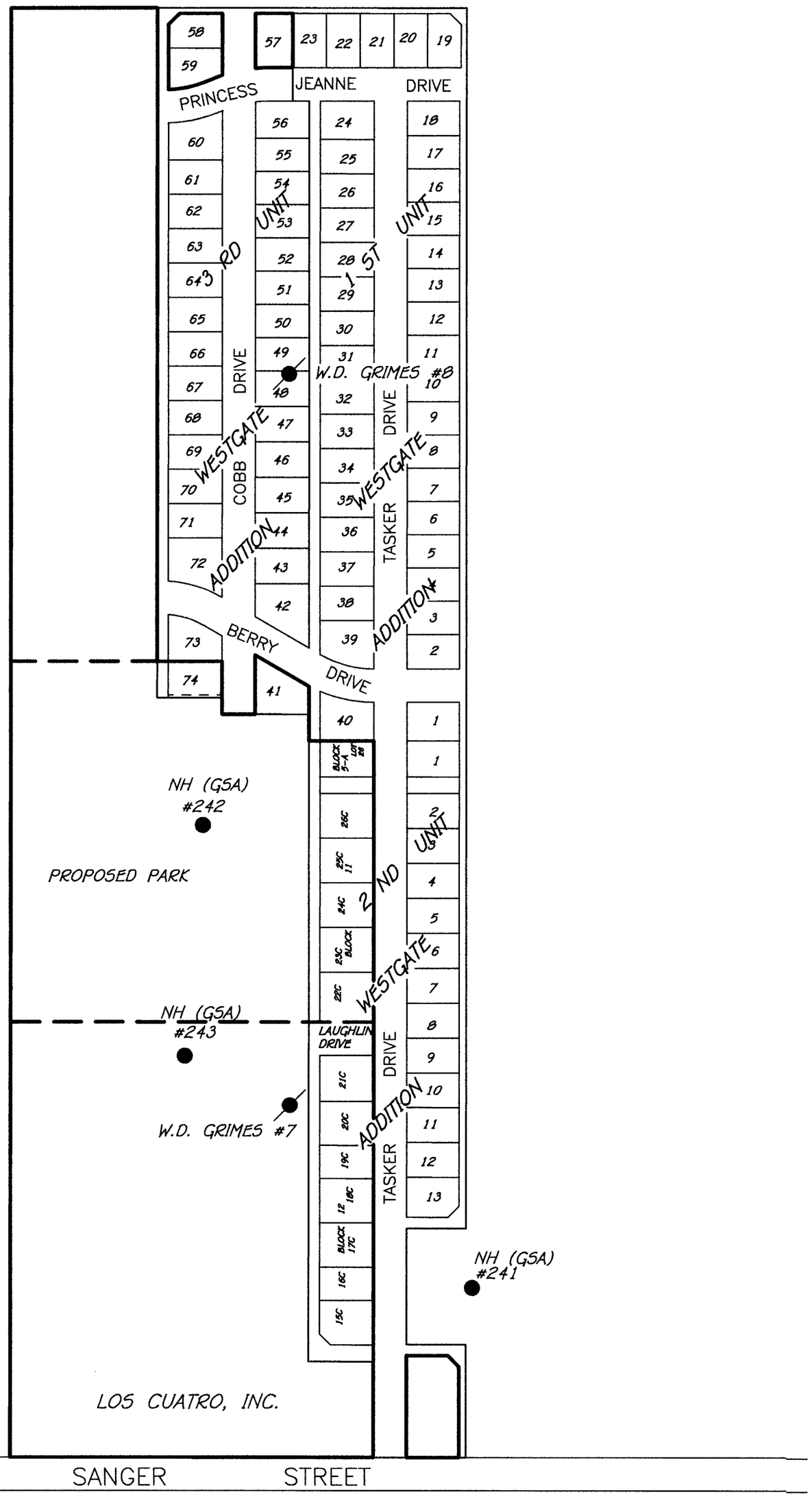

Sec 28
DATE OF PHOTOGRAPHY 7/12/1988
NOMINAL SCALE 1":200'



1978



1964



LEGEND

WELL NAME	LOCATION
NH (GSA) #241	330' FSL & 2310' FWL
NH (GSA) #242	1166' FSL & 1823' FWL
NH (GSA) #243	750' FSL & 1790' FWL
W.D. GRIMES #7	660' FSL & 1980' FWL
W.D. GRIMES #8	1980' FSL & 1980' FWL

200 0 200 400 600 Feet

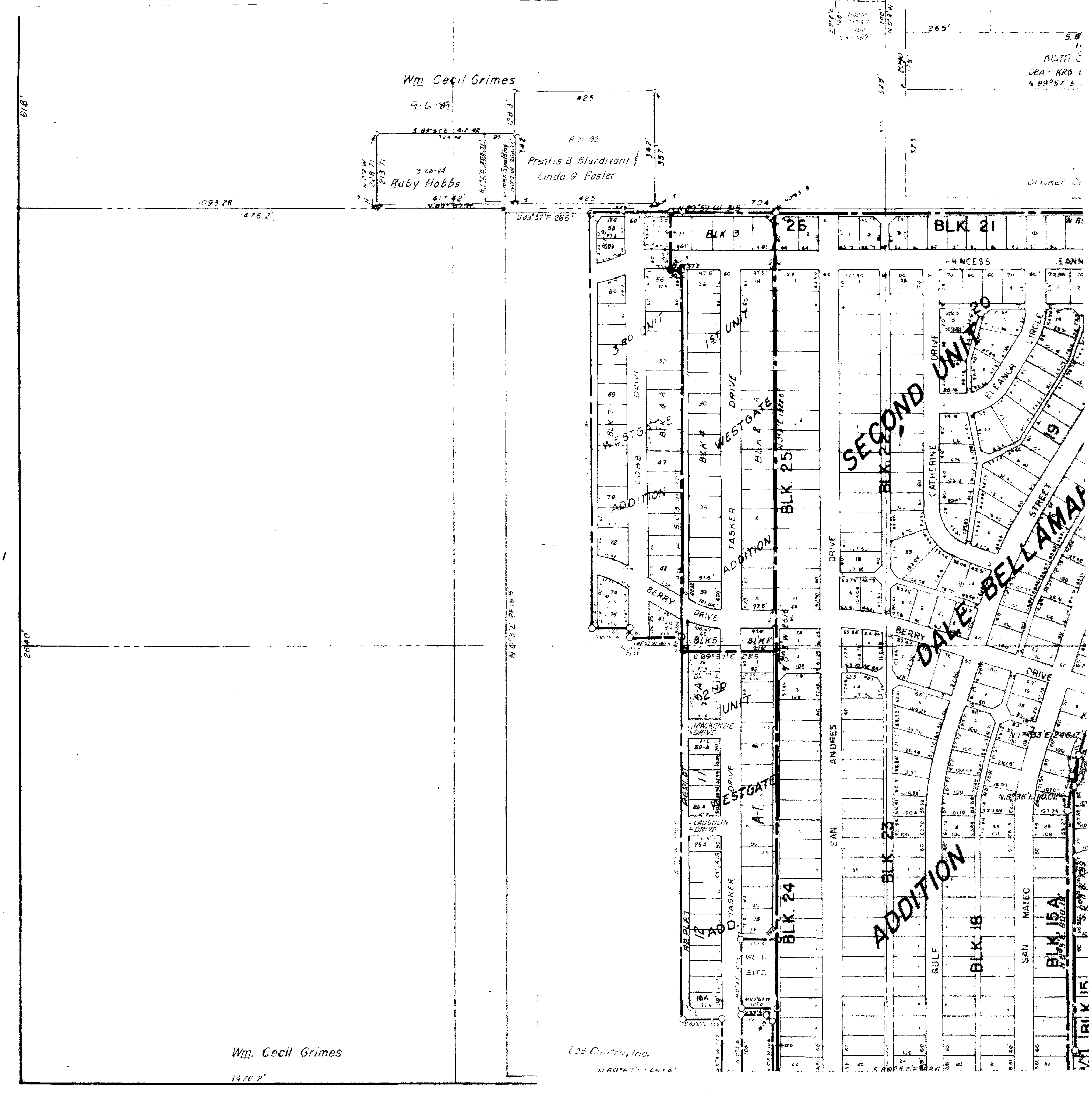
SCALE: 1"=200'

BBC INTERNATIONAL INC.

FIRST, SECOND, AND THIRD UNITS OF WESTGATE ADDITIONS
LOCATED IN THE WEST HALF OF SECTION 28,
TOWNSHIP 18 SOUTH, RANGE 38 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

Surveyed By: LAWLESS	Drawn By: J.L.Presley	Last Rev.:	D-842-1
Date Begin: 5/11/98	Date: 5/12/98	Disk: JLP#201	
Date End:	Approved By:	Sheet of	
Project #: 98110738	Filename: BBC0738		

JOHN W. WEST ENGINEERING COMPANY
CONSULTING ENGINEERS & SURVEYORS – HOBBS, NEW MEXICO


Wm Cecil Grimes
9-6-89
Ruby Hobbs
3-26-94
James Spalding
Prentis B Sturdivant &
Linda G. Foster
8-21-92
1093 28
1476.2'
618'
2640'
BLK 3
26
BLK 21
PRINCESS
3RD UNIT
WESTGATE
COBB
ADDITION
BLK 7
1ST UNIT
WESTGATE
TASKER
ADDITION
BLK 4
BLK 8
BLK 25
SECOND UNIT
DALE BELLAMAH
ADDITION
BLK 22
BLK 23
BLK 24
BLK 18
BLK 15A
BLK 19
BLK 20
CATHERINE DRIVE
ELEANOR CIRCLE
STREET
BERRY DRIVE
BLK 5
BLK 6
52ND UNIT
MACKENZIE DRIVE
LAUGHLIN DRIVE
REPLAT
WESTGATE
A-1
TASKER DRIVE
2ND ADD.
WELL SITE
SAN ANDRES DRIVE
GULF
SAN MATEO
Wm. Cecil Grimes
1476.2'
Los Cuatro, Inc.