AP - 013

STAGE 1 & 2 WORKPLANS

DATE:
Oct. 4, 1999

October 4, 1999

State of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

BY CERTIFIED MAIL
RETURN RECEIPT NO.
Z 203 735 137

Attn: William Olson

RE: Additional Data Required to Complete Stage 1 Abatement Plans for the Following Sites:

- **SPS-11 Lea County, New Mexico**
- **TNM-98-05A Lea County, New Mexico**
- **TNM-97-14 Lea County, New Mexico**
- **TNM-97-16 Lea County, New Mexico**
- **TNM-97-17 Lea County, New Mexico**
- **TNM-97-18 Lea county, New Mexico**

Dear Mr. Olson:

EOTT Energy Corporation (EOTT) has requested that Environmental Technology Group, Incorporated (ETGI) assist them in field activities and the acquisition of additional data at the referenced sites. The additional field activities consist primarily in the completion of additional soil borings and/or ground water monitoring wells at these sites to either document soil and ground water conditions at the release point or define the lateral extent of ground water impact. In order to minimize cost and maximize efficiency, ETGI would like to conduct these similar tasks in sequence.

As such, on the behalf of EOTT, ETGI request the approval for the following work plans for each site. The work plans are designed to allow for the collection data required to complete a Stage 1 Abatement Plan for each site. In addition, a generalized summary of our Quality Assurance/Quality Control (QA/QC) Plan is provided as Attachment A. These protocol will be applicable to all the referenced sites.

Once the following work plans are approved, ETGI will initiate field activities within 14 days and complete the field work within 14 days subsequent to initiation. Individual Stage 1 Abatement Plans will be submitted to your agency within 60 days of the completion of the field work. Subsequent to your approval of each Stage 1 Abatement Plan, a Stage 2 Abatement Plan will be completed for each site within 60 days, or 120 days with good cause. Quarterly ground water monitoring, at all of the referenced sites, will continue as previously approved by your agency.

All of the sites are located in Lea County, New Mexico, which is situated in the southeast portion of the state. The area is located in the geologic province commonly known as the Permian Sedimentary Basin from which oil and gas are produced from various Permian and Pennsylvanian age Formations. Generally, all of the sites are located in sparsely populated, semi-arid terrain common to the basin. Topographically, the area ranges from flat to rolling hills or draws containing intermittent streams. Ground water at the sites range from 40 to 60 feet below the ground surface (bgs). The site locations are depicted on Figure 1 and individual site maps are provided in the subsequent figures, all of which are in Attachment B.

SPS-11

A review of the file for this site indicates that ground water samples, collected from down gradient monitoring well, MW-17, have contained benzene in excess of regulatory limits for several monitoring events. The soil and groundwater data indicate the possibility of multiple release events and locations. Regardless of the site's past release history, the down gradient extent of impacted ground water is currently not defined.

ETGI recommends the installation of an estimated three to five additional wells, located down gradient to monitoring well MW-17. The initial well will be placed approximately 200 feet southeast of monitoring well MW-17 and subsequent well locations will be based on field data collected from the initial well. The stated goal of the well placement selection will be to define the cross gradient and down gradient extent of the plume associated with monitoring well MW-17. A site map is provided as Figure 2.

TNM-98-05A

A review of the file for this site indicates that the four existing monitoring wells do not adequately define the extent of impacted soil, free phase product or dissolved phase hydrocarbons in the ground water. As much as 3.36 feet of product has been measured in monitoring well MW-2, which represents the most down gradient well in the western portion of the site. In addition, impacted soil was collected from the boring advanced for the well. Dissolved phase benzene concentrations, in excess of regulatory standards, have been detected in samples collected from monitoring well MW-4. This well represents the most down gradient well in the eastern portion of the site.

ETGI recommends that approximately eight geoprobe borings be advanced around the release point to more completely characterize the extent of impacted soil remaining subsequent to the excavation. An estimated minimum of five monitoring wells will be required to define the lateral extent of impacted ground water. These include:

- One - up gradient well, north of monitoring well MW-1;
- Two - cross gradient wells, west of monitoring well MW-2 and east of monitoring well MW-4; and

- Two - downgradient wells, south of monitoring well MW-2 and south of monitoring well MW-4.

Field data from the initial proposed wells may modify the exact locations, however, the stated purpose of the well location selection is to define the lateral extent of impacted ground water associated with the release. The proposed monitoring well points are depicted on Figure 3

TNM-97-14

A review of the file for this site indicates that there is no monitoring well located near the release point. ETGI recommends that one monitoring well be installed within 20 feet of the southwest corner of the excavation. If highly impacted soil is present in the boring, approximately four geoprobe borings will be installed in the area to determine the lateral extent of impacted soil remaining subsequent to the excavation. The proposed monitoring well location is depicted on Figure 4.

TNM 97-16

A geoprobe survey is under way at the site to determine the extent of impacted soil remaining subsequent to the excavation has been determined. ETGI recommends that one additional monitoring well be installed near the release point. In addition, a representative soil sample, from each 2,000 cubic yards of the land farm soil has been collected in order to characterize the present condition of the soil. The location of the proposed monitoring well is depicted on Figure-5.

TNM 97-17

A review of the file for this site indicates that there is no ground water monitoring well installed near the release point. ETGI recommends that one ground water monitoring well should be installed between soil boring SB-1 and the release point as depicted on Figure 6.

TNM 97-18

A review of the file for this site indicates that there is no ground water monitoring well installed near the release area and that ground water samples collected from down gradient well MW-3 exceed regulatory standards for dissolved phase benzene. ETGI recommends that one well should be installed in the release area and that two wells should be installed down gradient of monitoring well MW-3 as depicted on Figure 7.

If you have any questions or concerning any of the activities or scheduling proposed in this letter, please contact Lennah Frost, of EOTT Energy Corp. at (915) 684-3467.

Sincerely:

ENVIRONMENTAL TECHNOLOGY GROUP, INC.

Jesse Taylor
Principal Geologist

cc: Lennah Frost - EOTT Energy Corporation

Attachment

ATTACHMENT A

ETGI QA/QC PROCEDURES

Soil Sampling

Samples of subsurface soils will be obtained utilizing either a split spoon sampler (air rotary drilling rig) or a two inch, continuous sampling tube with a clean polybuterate liner (geoprobe). Representative soil samples will be divided into two separate portions using clean, disposable gloves and clean sampling tools. One portion of the soil sample will be placed in a disposable sample bag. The bag will be labeled and sealed for head-space analysis using a photo-ionization detector (PID) calibrated to a 100 ppm isobutylene standard. Each sample will be allowed to volatilize for approximately thirty minutes at ambient temperature prior to conducting the analysis.

The other portion of the soil sample will be placed in a sterile glass container equipped with a Teflon-lined lid furnished by the analytical laboratory. The container will be filled to capacity to limit the amount of head-space present. Each container will be labeled and placed on ice in an insulated cooler. Upon selection of samples for analysis, the cooler will be sealed for shipment to the laboratory. Proper chain-of-custody documentation will be maintained throughout the sampling process.

Soil samples will be delivered to Environmental Lab of Texas, Inc. in Midland, Texas for BTEX and TPH analyses using the methods described below. Soil samples will be analyzed for BTEX and TPH-DRO within fourteen days following the collection date.

The soil samples will be analyzed as follows:

- BTEX concentrations in accordance with EPA Method 8020, 5030
- TPH concentrations in accordance with modified EPA Method 8015-GRO/DRO

Ground Water Sampling

Monitoring wells will be developed and purged with a clean PVC bailer. The bailer will be cleaned prior to each use with Liqui-Nox detergent and rinsed with distilled water. Monitoring wells with sufficient recharge will be purged by removing a minimum of three
well volumes. Monitoring wells that do not recharge sufficiently will be purged until no additional ground water can be obtained.

After purging the wells, ground water samples will be collected with a disposable Teflon sampler and polyethylene line by personnel wearing clean, disposable gloves. Ground water sample containers will be filled in the order of decreasing volatilization sensitivity (i.e., BTEX containers will be filled first and PAH containers second).

Ground water samples collected for BTEX analysis will be placed in 40 ml glass VOA vials equipped with Teflon-lined caps. The containers will be provided by the analytical laboratory. The vials will be filled to a positive meniscus, sealed, and visually checked to ensure the absence of air bubbles.

Ground water samples collected for PAH analysis will be filled to capacity in sterile, 1 liter glass containers equipped with Teflon-lined caps. Ground water samples collected for metals analysis will be filled to capacity in sterile, 1 liter plastic containers equipped with Teflon-lined caps. The containers will be provided by the analytical laboratory.

The filled containers will be labeled and placed on ice in an insulated cooler. The cooler will be sealed for transportation to the analytical laboratory. Proper chain-of-custody documentation will be maintained throughout the sampling process.

The ground water samples will be analyzed as follows:

- BTEX concentrations in accordance with EPA Method 8020, 5030
- TPH concentrations in accordance with modified EPA Method 8015-GRO/DRO

Decontamination Of Equipment

Cleaning of drilling equipment will be the responsibility of the drilling company. In general, the cleaning procedures will consist of using high pressure steam to wash the drilling and sampling equipment prior to drilling and prior to starting each hole. Prior to use, the sampling equipment will be cleaned with Liqui-Nox detergent and rinsed with distilled water.

Laboratory Protocol

The laboratory will be responsible for proper QA/QC procedures. These procedures will either be transmitted with the laboratory reports or on file at the laboratory.

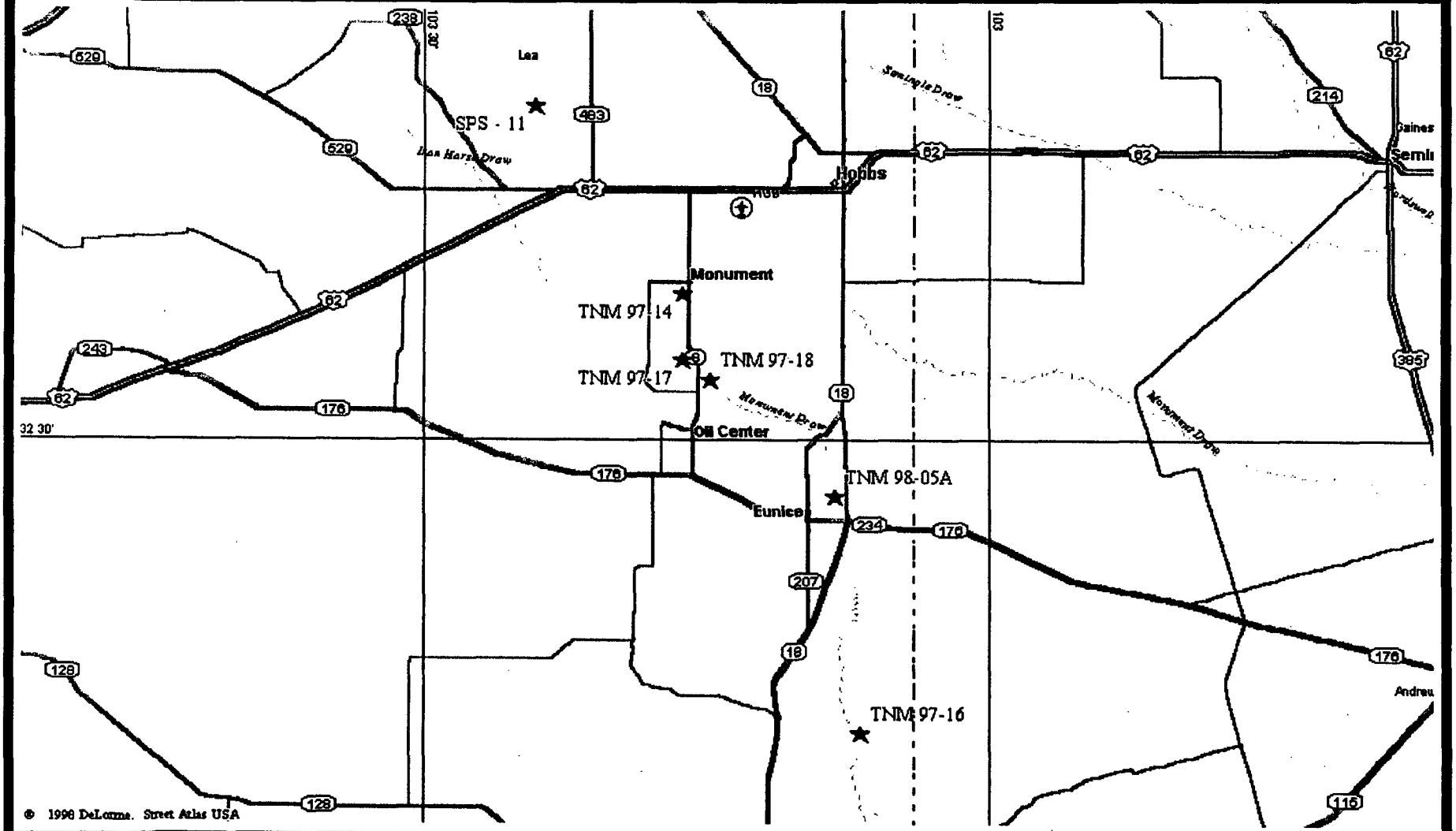
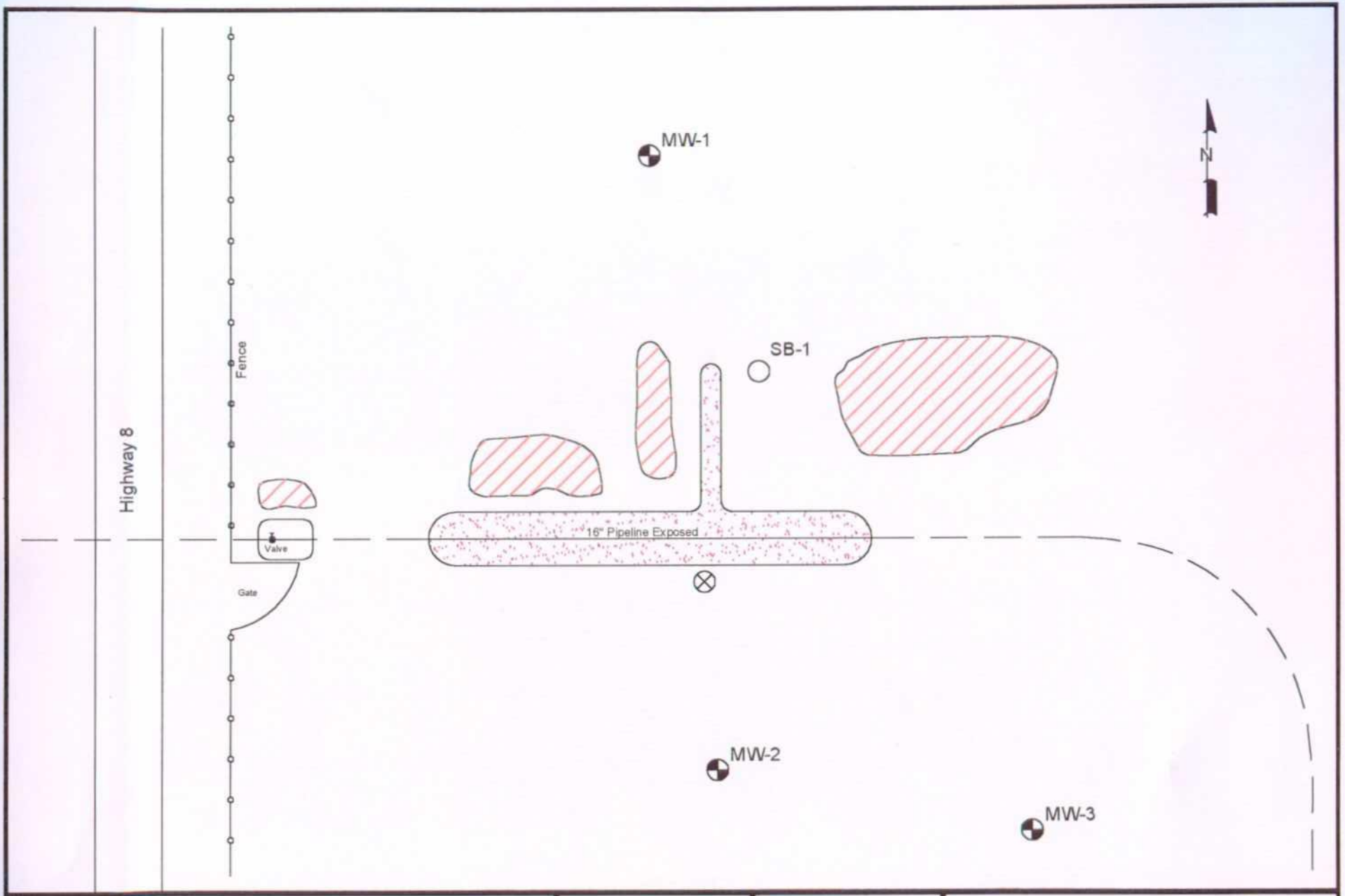


FIGURE 1	Referenced Site Locations	Environmental Technology Group, INC.
Not To Scale	Lea County, NM	9 - 28 - 99 RS



LEGEND:

- Exsisting Monitoring Wells
- Proposed Ground Water Monitoring Well Location.
- Exsisting Soil Boring
- Stockpile Soil
- Excavated Area

Figure 7
Site Map

TNM 97-18
Lea County, NM

Environmental Technology Group, INC.

Scale: 1" = 40'	Prep By: RS	Checked By:
August 19,1999	ETGI Project #	