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REPORTS

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June 18, 2002

RECEIVED
JUL 17 2002
Environmental Bureau
Oil Conservation Division

Mr. Stephen Weathers
Duke Energy Field Services, LP
370 17th Street, Suite 900
Denver, CO 80202

Re: Groundwater Characterization Summary and Remediation Recommendations for the X-Line Leak on the Etcheverry Ranch, Lea County New Mexico

Dear Mr. Weathers:

This letter summarizes the groundwater conditions and provides a recommended remediation program for the X-Line spill on the Etcheverry Ranch in Lea County New Mexico. The letter does not discuss the soil remediation activities completed by Environmental Plus Incorporated (EPI) between January and March 2002 but incorporates the data generated during those activities as necessary to supplement the groundwater information.

The remainder of the letter includes a brief section with relevant background information, a summary and interpretation of the soil and groundwater data collected to date and a recommended remediation program.

HYDROCARBON DISTRIBUTION IN SOIL AND GROUNDWATER

This section summarizes the subsurface distribution of hydrocarbons in the soil and groundwater. The soil data was collected by EPI during their remediation activities between January and March 2002. The groundwater data was collected between March and May 2002.

Hydrocarbon Distribution in Soils

Environmental Plus Incorporated (EPI) completed the soil excavation activities from January through mid-March 2002. EPI delineated the affected area and removed 6746 cubic yards of material within it to a depth of 37 feet. The materials were disposed of at the New Mexico Oil Conservation Division (OCD) approved and permitted Artesia Aeration Landfarm in Maljamar, New Mexico.

EPI also advanced soil borings within and just outside of the affected area to characterize the hydrocarbon distribution from 40 feet below ground surface (bgs) to the top of the water table at 75 feet. The affected area at the 37-foot depth and the EPI boring locations are shown on Figure 1. The field photoionization detector (PID) measurements made by EPI during this program and the laboratory analytical results for all depths are

summarized in Table 1. The first page of Table 1 shows the results for the borings advanced outside the affected area. The second and third pages of Table 1 show the results for the borings advanced inside the affected area.

Measurements by EPI using Global Positioning System (GPS) technology indicate an affected area of approximately 2,400 square feet. EPI had to overexcavate a larger area to safely remove the affected materials to the 37 foot depth. The unaffected materials that were excavated to safely reach the 37-foot depth are stockpiled onsite and will be replaced upon backfilling.

The PID data for the soils is depicted graphically in two different fashions. Figures 2 and 3 show the distribution of the PID readings at each borehole location based upon the grab samples from the soil borings. Also shown on both figures is the 100 ppm line because of the OCD guidance that permits the substitution of a 100 ppm or less PID reading for the BTEX constituents. Figures 4, 5, 6 and 7 show the areal distributions of the PID concentrations in the EPI soil borings at 40, 50, 60 and 65 feet respectively. Examination of these figures indicates the following:

1. The greatest hydrocarbon impacts are found in the west-center of the excavated area directly adjacent to the original release point. The highest readings were measured either at the middle boring (M) or the west boring (W) in the excavation. The west boring sample had the highest measurement at the 40-foot depth. The middle boring samples having the highest measurements below 40 feet.

2. The north boring samples (N) dropped to background levels between 40 and 50 feet.

3. The samples from borings NW, S and SE appeared to have slightly elevated PID readings when compared to the SW boring.

Two other important facts should be noted. First, EPI excavated a trench approximately halfway between boring E and boring S. The results for this trench, labeled Trench S in Figure 2, indicate a much lower level of hydrocarbon impacts that dropped to 28.1 ppm by 29 feet. The excavation is now approximately 9 feet lower than this sample, and EPI has not encountered any additional visibly-affected materials in this area. The results for this location do not appear on Figures 4 through 7 because all samples were shallower than 37 feet.

Second, the PID readings increased in boring E from 75 to 80 feet bgs as shown on Table 1 and in Figure 2. This pattern indicates that hydrocarbons have migrated to the area of boring E in the groundwater from upgradient locations rather than vertically through the subsurface materials. The PID distribution patterns for the other boreholes inside the affected area all indicate that their hydrocarbon distributions directly resulted from the pipeline leak.

Hydrocarbon Distribution in Groundwater

The groundwater data discussed in this document was collected in two phases. EPI advanced temporary borings to the water table and collected representative samples at the locations labeled East Test Well, East Temporary Monitoring Well and MWS1 on Figure 1. The results are summarized in Table 2. EPI also collected a sample from MW-2 (originally labeled MWNW1) on March 28, 2002. These results are also summarized in Table 2.

The second phase of groundwater sampling was completed after the installation of wells MW-1 through MW-7. Installation information on these wells is summarized in Table 3. EPI collected samples from all of the wells on April 25 and May 21, 2002. Note that MW-7 was not installed at the April 25 sampling episode. The phase two groundwater sampling results are summarized on Table 2 along with the New Mexico water quality drinking water standards. The constituents that exceeded this standard are highlighted (bold) on Table 2.

EPI measured the depths to water in Wells MW-1 through MW-6 on May 17 and 21, 2002. The values and the resulting water table elevations are summarized on Table 4. Water table contours were generated using the program Surfer with the kriging option and are shown on Figures 8 and 9 for the two measurement episodes.

The projected groundwater flow paths through the source area are also shown on Figures 8 and 9. The flowpaths indicate that groundwater flows south of due east directly toward well MW-6. The calculated groundwater gradient of 0.0035 feet/foot is very flat. The groundwater transport velocity can be estimated based upon the above groundwater gradient and assumed values for the hydraulic conductivity and effective porosity. Based upon a hydraulic conductivity of 10 feet per day and an effective porosity of 0.2, the groundwater velocity is estimated at:

$(0.0035*10)/0.2 = 0.175$ feet per day or 63 feet per year.

This very-slow groundwater transport rate is a direct result of the very flat (0.0035 feet/foot) groundwater gradient. The permeability of the material is actually very high because of its sandy nature and lack of the finer grained silts and clays.

The May 2002 benzene, toluene, ethylbenzene and total xylenes results are listed on Figure 10 at their respective wells. Well MW-1, located upgradient from the spill, and wells MW-4 and MW-5 did not contain detectable concentrations of benzene, toluene, ethylbenzene and total xylenes or the constituents were measure at the detection limit. Well MW-6 did not contain detectable toluene but did contain benzene and ethylbenzene at the 0.002 mg/l detection limit and total xylenes at 0.047 mg/l; however, the concentrations were below their respective water quality standards (Table 2). Monitoring wells MW-2, MW-3 and MW-7 all contained hydrocarbon constituents above the water quality standards (Table 2).

The BTEX distribution shown in Figure 10 coincides with the groundwater flow paths shown in figures 8 and 9. The BTEX concentrations are the highest at source location MW-7, and they rapidly decline along the groundwater flowpath until they are just above the detection limit, but well below the Water Quality Control Commission drinking water standards, at well MW-6. The distance along the groundwater flow path from the eastern boundary of the affected area to MW-6 is less than 100 feet. This sharp decline in hydrocarbon concentrations between may result from either a lack of travel time away from the source because the release is so recent and/or the presence of natural bioremediation.

Other Constituents in Groundwater

Select wells were tested for inorganic parameters and metals. Wells MW-1, MW-2 and MW-5 were tested for a select group of inorganic parameters primarily to evaluate potential incrustation problems should re-injection of water be necessary. The results are summarized in Table 5. Examination of Table 5 establishes that the release has not introduced inorganic constituents into the groundwater. The data will be evaluated relative to incrustation should reinjection become a necessary remediation component at the site.

Wells MW-3 and MW-6 were tested per ODC requirements for the metals arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver as part of the May groundwater sampling episode. None of these metals were detected in either sample at the following detection limits:

Arsenic	0.01 mg/l
Barium	1 mg/l
Cadmium	0.05 mg/l
Lead	0.05 mg/l
Mercury	0.002 mg/l
Selenium	0.05 mg/l
Silver	0.05 mg/l

Chromium was detected at a concentration of 0.283 mg/l in well MW-3 and was not detected in well MW-6 at a detection limit of 0.1 mg/l. These samples were not filtered, and the elevated chrome in MW-3 could originate from the dissolution of solid particles due to the acidification of the sample.

RECOMMENDED REMEDIATION PROGRAM

This section describes the recommended remediation program for this site. The factors that governed the selection of this program are described first. A conceptual description of the proposed remediation system then follows.

Selection Factors

This program includes active remediation using both soil vapor extraction and air sparging along with groundwater monitoring to both verify remediation progress and monitor for expansion of a hydrocarbon plume in the groundwater. This program was formulated and selected based upon the following factors:

1. The distribution of the affected materials. The affected materials include unsaturated soils between 37 feet and the top of the water table (approximately 75 feet) and the affected groundwater beneath the excavation and to a distance of less than 100 feet outside the affected area. This is a very small area that directly resulted from the prompt removal of the soils to 37 feet almost immediately upon discovery of the leak.

2. The difficulty of excavating additional affected materials. The affected area has an approximate radius of 35 feet. Assuming a 75 foot-deep circular excavation (the depth to water) leads to the following rough estimations of excavation surface area and volume of materials removed:

Average Side Slope	Excavation Radius[(1)] (feet)	Excavation Surface Area (Acres)	Excavation Volume ($yards^3$)	Percentage Material Removed That is Impacted
3 horizontal to 1 vertical	260	4.9	227,000	4.7%
4 horizontal to 1 vertical	335	8.1	364,000	2.9%

Note: Volumes calculated as the frustum of a right cone.

The last column indicates that the affected materials would only constitute between 2.9 and 4.7 percent of the total materials that would be removed. It is also important to remember that all of these materials would have to be both removed and replaced so the volumes of material that would be handled would double. Finally, the drilling and well installation activities indicate that the sand between 37 and 75 feet is susceptible to liquification and thus is probably very unstable. This fact greatly increases the potential safety hazards that would be associated with this type of project. Moreover, it is likely that large areas would have to be shored before excavation activities could safely proceed.

3. The physical properties of the hydrocarbons and the native materials. The released hydrocarbons were a light condensate that appeared to consist primarily of the lighter constituents. The condensate has both a low density and an apparent low viscosity. These facts indicate that the majority of the hydrocarbon compounds are relatively volatile and amenable to biodegradation.

The remaining affected materials consist primarily of a well-sorter very-fine to fine-grained sand that contains almost no fines (silts and clays): i.e. a sand box. This material possesses a very high natural permeability that permits the movement of both water and vapors. In addition, the uniform distribution and granular nature of the material makes it likely that a properly-designed air sparge system will not result in the channelization problems.

4. Modeling Results. EPI completed modeling using the Vadsat model. Results from this model have previously been accepted by OCD as both conservative in assumptions (i.e. assumes worst-case situations), and representative of the actual remediation results. The results of the modeling effort are attached. Examination of the modeling results indicates that the placement of a 1-foot thick low permeability material at the current 37 foot depth prior to backfilling will negate any further infiltration of precipitation through the remaining unsaturated affected materials to the groundwater. Once the source is removed, the remaining hydrocarbons that are dissolved in the groundwater will continue to decline in concentration because of the natural attenuation processes.

Recommended Remediation System

This section presents the remediation system that is proposed by Remediacon. The system description is brief and focuses on the purposes of each component. Detailed design drawings will be prepared once the system is approved.

The recommended remediation system includes a low-permeability barrier to prevent further hydrocarbon migration and a soil vapor extraction (SVE) and air sparge systems to actively remove the hydrocarbons from the soils and groundwater within the affected area. Excess oxygen generated by the air sparge system will also enhance removal of hydrocarbon constituents in the affected groundwater in the area immediately outside of the affected zone, including wells MW-2 and MW-3, through increased biodegradation. Finally, the existing monitoring wells will be regularly monitored to ensure: 1) that the system is functioning as designed; and 2) that the hydrocarbons are not migrating down gradient. Each of these components is described below.

A minimum 1-foot thick layer of low-permeability material will be placed in the base of the excavation prior to the backfilling of the remaining excavation. A material with a minimum permeability of $1x10^{-5}$ cm/sec. The material will be compacted and tested in two 6-inch layers.

Two soil vapor extraction points completed from 37 to 60 and 60 to 75 feet below ground surface ('bgs) will be installed at the four locations shown on Figure 11. The soil vapor extraction system will be used to remove hydrocarbon vapors via soil gas from the affected materials by sucking air from the subsurface through the two extraction points and exhausting it to the atmosphere. Unaffected soil gases from outside the affected area

will then replace the affected vapors. This is a proven technology that is particularly effective in higher-permeability granular materials such as those found at this site.

The SVE system will also move unaffected soil gases containing oxygen through the affected materials. This continuous introduction of oxygen into the affected materials will stimulate biodegradation in the affected unsaturated materials, further reducing the hydrocarbon concentrations.

Vacuum monitoring points will be installed at the boundaries of the affected area to verify that the SVE system is functioning properly. A blower will be attached to the well and a vacuum will be placed on the system until a vacuum of 0.5 inches of water is measured on the vacuum monitoring points. The number and location of the extraction points may have to be changed based upon the site-specific conditions to ensure treatment within the boundaries shown on Figure 11.

The air sparge system is designed to inject air into the groundwater approximately 15 feet below the surface of the water table. The air then moves as small bubbles upward through the saturated materials. The air sparge system will remediate the dissolved hydrocarbons in two ways. First, the movement of the air bubbles through the groundwater will directly mobilize the dissolved hydrocarbon constituents from the groundwater into the unsaturated zone where they will be removed by the SVE system. In addition, the SVE system will provide a steady supply of oxygen that will promote biodegradation both in the affected area and in adjacent areas.

The air sparge points will be installed to provide the approximate treatment boundary shown on Figure 11. The system is design based upon a 20 foot radius of influence for each sparge point. The points will be constructed with blank PVC to a depth of 90 feet. A 2-foot long slotted section will then be placed, and the remaining annular area will be sealed with grout. The final number and location of the sparge points will be based upon the site-specific conditions; however, the final treatment area will, at a minimum, cover the area shown on Figure 11.

The conceptual site layout is shown on Figure 12. All of the equipment will be placed in an open-sided 20 foot by 20 foot shed. The entire treatment area can be enclosed by a 40 foot by 40 foot fence 4-strand barb wire fence. Power will be brought in underground from the Natural Gas Pipeline Company of America facility located to the northeast of the site. All pipes to/from the soil vapor extraction and air sparge systems that are outside the fenced treatment area will also be buried. An access road will also have to be maintained for the period that the system will be in service.

Existing groundwater wells MW-2, and MW-3 and MW-7 will be monitored monthly for the first 3 months and then quarterly for the next three quarters to track the progress of remediation. A new well (MW-8) will be installed north of well MW-6. Wells MW-5, MW-6 and MW-8 will then be sampled monthly for the first 3 months and then quarterly for the next three quarters to ensure that the groundwater plume is not expanding. Water

levels will be measured in all wells (including MW-1 and MW-4) to ensure that the groundwater gradient does not change over the length of the remediation period.

The above program should result in remediation of the groundwater to below the New Mexico Water Quality Control Commission Standards. System performance will be evaluated quarterly. The system will be modified as necessary. A closure plan will be written a minimum of 3 months prior to the estimated end of remedial activities. Remedial activities will not cease until closure is approved by the OCD.

Thank you for allowing us to prepare this conceptual plan. Do not hesitate to contact us if you have any questions, comments or additional needs.

Respectfully Submitted,

ENVIRONMENTAL PLUS INCORPORATED

Pat McCasland
Technical Manager

REMEDIACON INCORPORATED

Michael H. Stewart, P.E.
Principal Engineer

MHS/tbm

INCLUDED BELOW ARE THE TABLES, FIGURES, AND ATTACHMENTS

TABLES

Table 1 – Summary of Soils Data From EPI Borings (Borings Outside the Affected Area)

Borehole	Sampling Interval (FT. BGS[1])	HEADSPACE VOC[2] (ppm)	GRO[3] mg/Kg	DRO[4] mg/Kg	TPH[5] (8015M.) mg/Kg	TPH[5] (418.1) mg/Kg	BTEX mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ehtyl Benzene mg/Kg	Total Xylenes mg/Kg	Chloride mg/Kg
Northwest	10	8.7										
Northwest	20	11.9										
Northwest	30	9.9										
Northwest	40	55.9										
Northwest	50	63.3										
Northwest	60	45.7										
Northwest	65	6.8	*10*	17.3	27.3		*0.030*	*0.005*	*0.005*	*0.005*	*0.015*	N/A
Northwest	70	10.0	*10*	*10*	20		*0.030*	*0.005*	*0.005*	*0.005*	*0.015*	N/A
Southeast	10	5.6										
Southeast	20	8.7										
Southeast	30	16.3										
Southeast	40	6.2										
Southeast	50	35.7										
Southeast	60	25.0										
Southeast	65	5.8										
Southeast	70	5.4										
South	10	5.5										
South	20	6.3										
South	30	8.0										
South	40	22.2										
South	50	16.3										
South	60	14.7										
South	65	23.2										
South	70	9.7										
Southwest	10	13.0										
Southwest	20	3.3										
Southwest	30	3.2										
Southwest	40	3.0										
Southwest	50	2.8										
Southwest	60	1.4										
Southwest	65	1.3	*10*	90.7	**100.7**		*0.030*	*0.005*	*0.005*	*0.005*	*0.015*	N/A
Southwest	70	1.0	*10*	29.3	39.3		*0.030*	*0.005*	*0.005*	*0.005*	*0.015*	N/A

Table 1 – Summary of Soils Data From EPI Borings (Borings Inside the Affected Area)

Excavation Borehole	Sampling Interval (FT. BGS[1])	HEADSPACE VOC[2] (ppm)	GRO[3] mg/Kg	DRO[4] mg/Kg	TPH[5] (8015M.) mg/Kg	TPH[5] (418.1) mg/Kg	BTEX mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ehtyl Benzene mg/Kg	Total Xylenes mg/Kg	Chloride mg/Kg
North	20	**421**										
North	25	**255**										
North	30	**460**										
North	35	**566**										
North	40	**428**										
North	45	**317**										
North	50	6.4	*50*	*50*	*100*	*63.2*	*0.030*	*0.005*	*0.005*	*0.005*	*0.015*	N/A
North	55	3										
North	60	1.7										
North	65	1.6										
South	18	**323**										
South	23	**431**										
South	27	**339**										
South	28	**178**										
South	29	28.1	*50*	145	**195**	**448**	1.853	*0.005*	0.107	0.101	1.640	64
Middle	20	**1893**										
Middle	25	**1106**										
Middle	30	**946**										
Middle	35	**853**										
Middle	37	**N/A**	5400	6720	**12120**	**10100**	**263.17**	2.87	62.9	21.4	176	80
Middle	40	**605**										
Middle	45	**1870**										
Middle	50	**1947**										
Middle	55	**2900**										
Middle	60	**1800**										
Middle	65	**2058**	4960	2760	**7720**	**9830**	**321.137**	0.637	67.4	26.1	227	N/A

Table 1 – Summary of Soils Data From EPI Borings (Borings Inside the Affected Area)

Borehole	Sampling Interval (FT. BGS[1])	HEADSPACE VOC[2] (ppm)	GRO[3] mg/Kg	DRO[4] mg/Kg	TPH[5] (8015M.) mg/Kg	TPH[9] (418.1) mg/Kg	BTEX mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ehtyl Benzene mg/Kg	Total Xylenes mg/Kg	Chloride mg/Kg
East	20	28.5										
East	25	**1671.0**	*10*	90.4	**100.4**	**382**	0.298	*0.005*	*0.005*	0.009	0.279	N/A
East	30	**902.0**										
East	35	**727.0**										
East	40	**403.0**										
East	45	**274**	*10*	*10*	*20*	**251**	0.030	*0.005*	*0.005*	*0.005*	*0.015*	N/A
East	50	**205**										
East	55	**187**										
East	60	**156**										
East	65	**110**	*10*	*10*	*20*	**346**	0.030	*0.005*	*0.005*	*0.005*	*0.015*	N/A
East	70	55.4										
East	75	38.7										
East	80	**1700.0**	615	438	**1053**	**1390**	28.393	0.013	2.480	2.500	23.400	N/A
West	20	**1118.0**										
West	25	**1540.0**										
West	30	**2006.0**										
West	35	**1700.0**	150	314	**464**	**382**	8.003	*0.005*	0.150	0.508	7.340	N/A
West	40	**2014.0**										
West	45	**1744.0**										
West	50	**200.0**										
West	55	**194.0**	*10*	102	**112**	**251**	0.136	*0.005*	0.021	0.010	0.100	N/A
West	60	**900.0**										
West	65	**1500.0**	116	215	**331**	**346**	3.863	*0.005*	0.240	0.298	3.320	N/A

[1]bgs – below ground surface

[2]VOC–Volatile Organic Contaminants/Constituents

[3]GRO-Gasoline Range Organics (C_6-C_{10})

[4]DRO-Diesel Range Organics (>C_{10}-C_{28})

[5]TPH(8015 Mod.)-Total Petroleum Hydrocarbon = GRO+DRO. Reported detection limits are considered "de minimus" values and are included in the GRO/DRO and BTEX summations.

[6]Bolded values exceed the New Mexico Oil Conservation Division guideline threshold for the parameter

[7]Italicized values are < the instrument detection limit.

[8]N/A Not Analyzed

[9]Total Petroleum Hydrocarbon Method 418.1

Shaded Values were analyzed by Cardinal Laboratories of Hobbs New Mexico

Table 2 – Summary of Groundwater Results

New Mexico WQCC Standards		Benzene 0.01	Toluene 0.75	Ethyl Benzene 0.75	Total Xylenes 0.62	GRO	DRO
PHASE ONE GROUNDWATER SAMPLING RESULTS							
East Temporary Monitor Well	2/14/2002	**3.71**	**16.8**	**1.26**	**10.3**	NA	NA
East Test Well	3/28/2002	**2.83**	**9.57**	**1.1**	**8.94**	NA	NA
Monitor Well 2 (MWNW-1)	3/28/2002	**0.102**	**1.24**	0.204	**2.31**	NA	NA
MWS1	4/4/2002	**0.104**	0.102	0.103	0.296	NA	NA
PHASE TWO GROUNDWATER SAMPLING RESULTS							
MW-1	4/24/2002	<0.002	<0.002	<0.002	<0.006	<5	<5
MW-1	5/21/2002	0.002	0.003	<0.002	<0.006	NA	NA
MW-1 SPLIT	5/21/2002	0.002	0.002	<0.001	<0.001	NA	NA
MW-2 (MWNW-1)	4/25/2002	**0.025**	0.106	0.013	0.38	<5	<5
MW-2 Duplicate	4/25/2002	**0.026**	0.108	0.013	0.381	<5	<5
MW-2 (MWNW-1)	5/21/2002	**0.145**	**0.833**	0.062	**1.27**	NA	NA
MW-2 (MWNW-1) SPLIT	5/21/2002	**0.131**	0.563	0.054	**1.103**	NA	NA
MW-3 (MWSE-1)	4/25/2002	**0.061**	<0.002	0.023	0.189	<5	<5
MW- 3 (MWSE-1)	5/21/2002	**0.176**	0.004	0.023	0.451	NA	NA
MW- 3 (MWSE-1) SPLIT	5/21/2002	**0.173**	0.004	0.017	0.384	NA	NA
MW-4	4/24/2002	<0.002	<0.002	<0.002	<0.006	<5	<5
MW-4	5/21/2002	<0.002	<0.002	<0.002	<0.006	NA	NA
MW-4 SPLIT	5/21/2002	<0.001	<0.001	<0.001	<0.001	NA	NA
MW-5	4/25/2002	<0.002	<0.002	<0.002	0.011	<5	<5
MW-5	5/21/2002	<0.002	<0.002	<0.002	<0.006	NA	NA
MW-5 SPLIT	5/21/2002	<0.001	<0.001	<0.001	<0.001	NA	NA
MW-6	4/26/2002	<0.002	<0.002	0.004	0.123	NA	NA
MW-6	5/21/2002	0.002	<0.002	0.002	0.047	NA	NA
MW-6 SPLIT	5/21/2002	0.002	0.001	0.002	0.041	NA	NA
MW-7	5/21/2002	**5.75**	**16.6**	**0.895**	**7.04**	NA	NA
MW-7 SPLIT	5/21/2002	**7.17**	**20.6**	**1.06**	**8.7**	NA	NA

Notes: May 21, 2002 split sample results provided by L.V. Sims II
All units mg/l
Bold values exceed the New Mexico WQCC Standards

Table 3 – Summary of Well Location and Construction Information and May 2002 Water Table Elevations

Well	Date Installed	Northing	Easting	Ground Elevation	Top of Casing Elevation	Casing Stickup	Well Depth	Completion Interval	Top of Sand
MW-1	4/23/02	741,905.461	782,188.942	4164.07	4166.82	2.75	91	71-91	68
MW-2	3/26/02	741,893.379	782,286.837	4163.93	4166.66	2.73	88	68-88	62
MW-3	3/27/02	741,746.673	782,315.781	4163.84	4166.17	2.33	91	71-91	61
MW-4	4/24/02	741,633.172	782,309.305	4163.74	4166.40	2.66	91	71-91	68
MW-5	4/23/02	741,689.989	782,389.830	4163.52	4165.90	2.38	89	69-89	56
MW-6	4/25/02	741,810.822	782,445.476	4163.29	4165.94	2.65	90	70-90	68
MW-7	5/02	NA	NA	NA	NA	NA	85	65-85	59

Note: NA: Information not available. MW-7 is currently completed at the base of the 37 foot-deep excavation. It was completed using 4-inch diameter threaded PVC casing. Additional lengths of blank PVC casing will be added to the well as the excavation is backfilled

Table 4 – Depth to Water and Water Table Elevation Information

Location	Top of PVC Casing	5/17/2002 Water Depth (BTOC)	Water Table Elevation	5/21/2002 Water Depth (BTOC)	Water Table Elevation
MW-1	4166.73	74.88	4091.85	74.86	4091.87
MW-2	4166.39	74.94	4091.45	74.97	4091.42
MW-3	4166.19	75.00	4091.19	74.97	4091.22
MW-4	4166.45	75.03	4091.42	74.99	4091.46
MW-5	4165.85	74.88	4090.97	74.84	4091.01
MW-6	4165.69	74.85	4090.84	74.80	4090.89

Notes: All units in Feet
BTOC: Below top of casing

Table 5 – Summary of Inorganic Constituent Sampling Results

Constituent	MW-1	MW-2	MW-5
Fluoride	0.3	<1	<1
Iron (Total)	<1	<1	<1
Iron (Dissolved)	1.97	2.7	9.7
Manganese (Total)	<0.1	0.314	<0.1
Manganese (Dissolved)	<0.1	0.334	<0.1
Sodium	29	26	35
Calcium	69	73	69
Magnesium	18	34	22
Potassium	2.72	2.42	2.24
Conductivity	747	807	719
Turbidity	151	178	151
Chloride	52	56	56
Sulfate	85	125	108
Carbonate	0	0	0
Bicarbonate	154	217	184
TDS	384	447	352

Note: All units mg/l

FIGURES

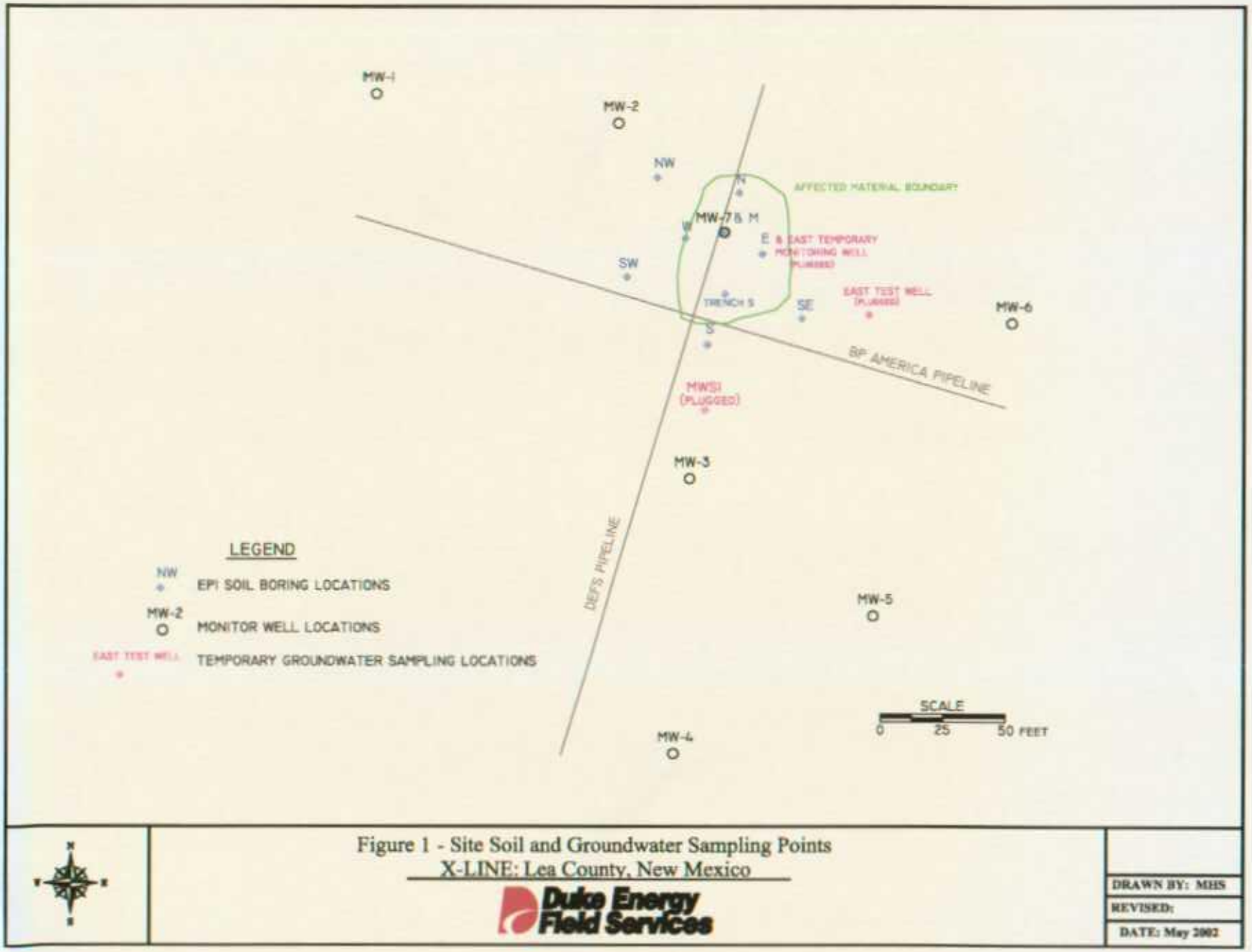


Figure 1 - Site Soil and Groundwater Sampling Points
X-LINE: Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: May 2002

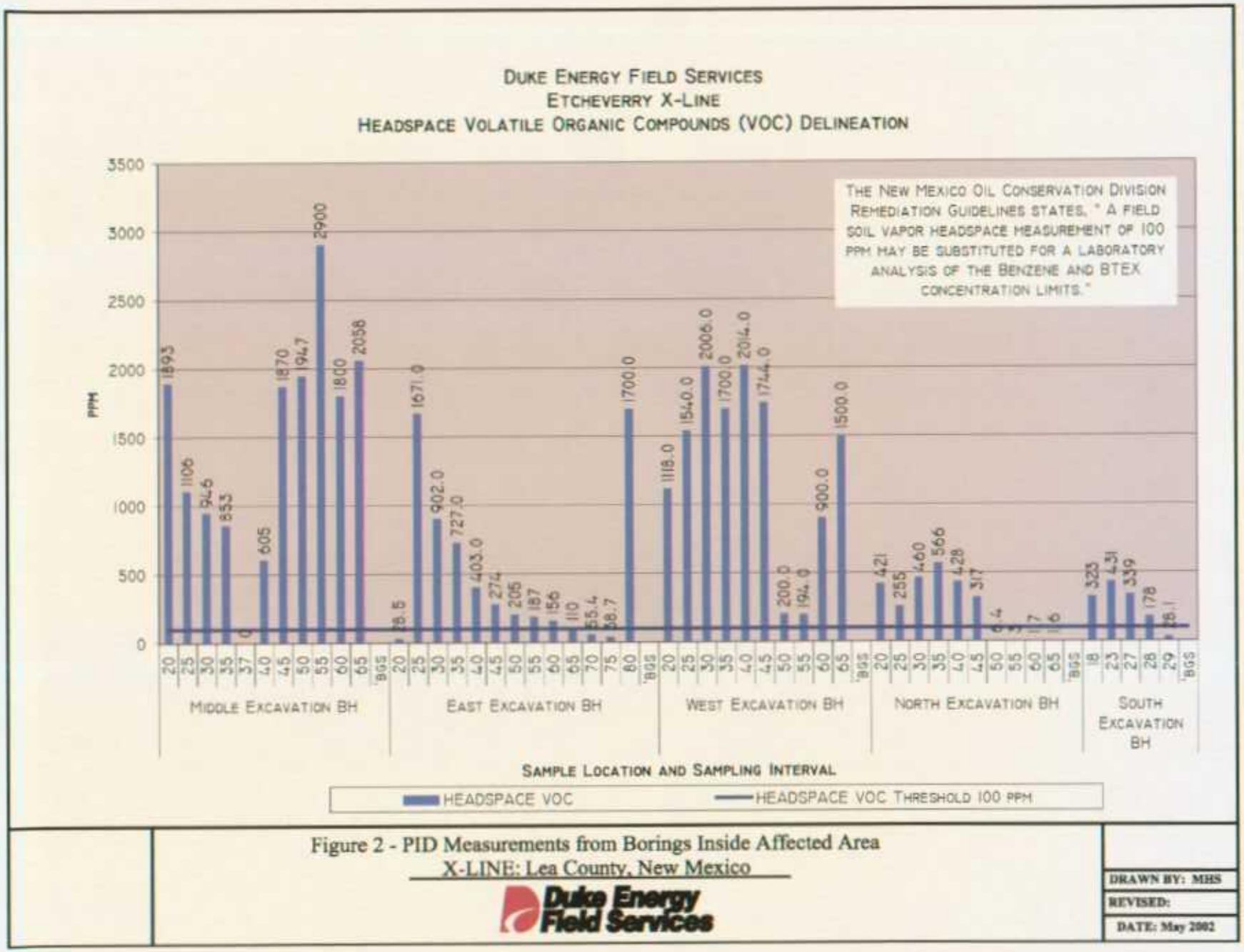


Figure 2 - PID Measurements from Borings Inside Affected Area
X-LINE: Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: May 2002

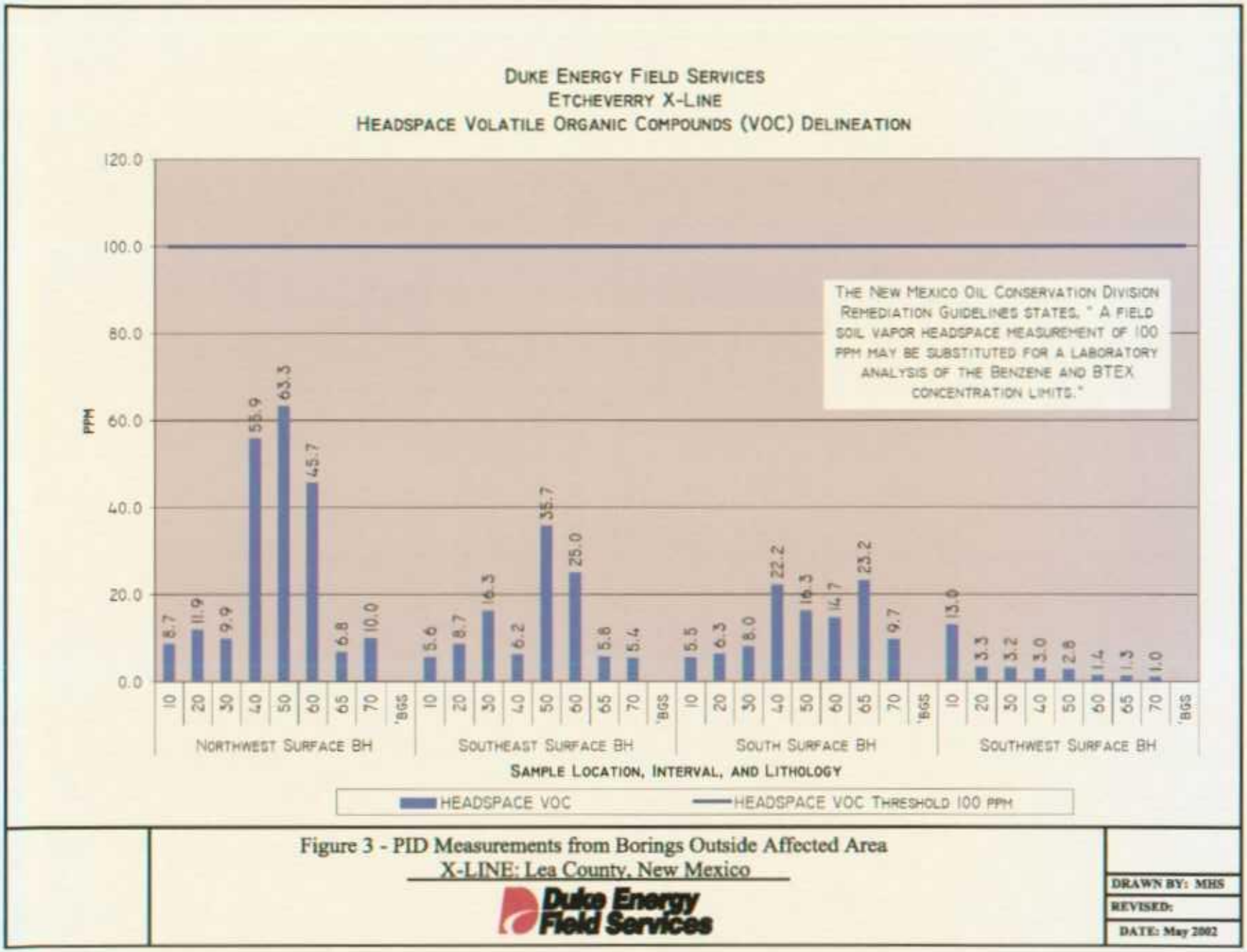
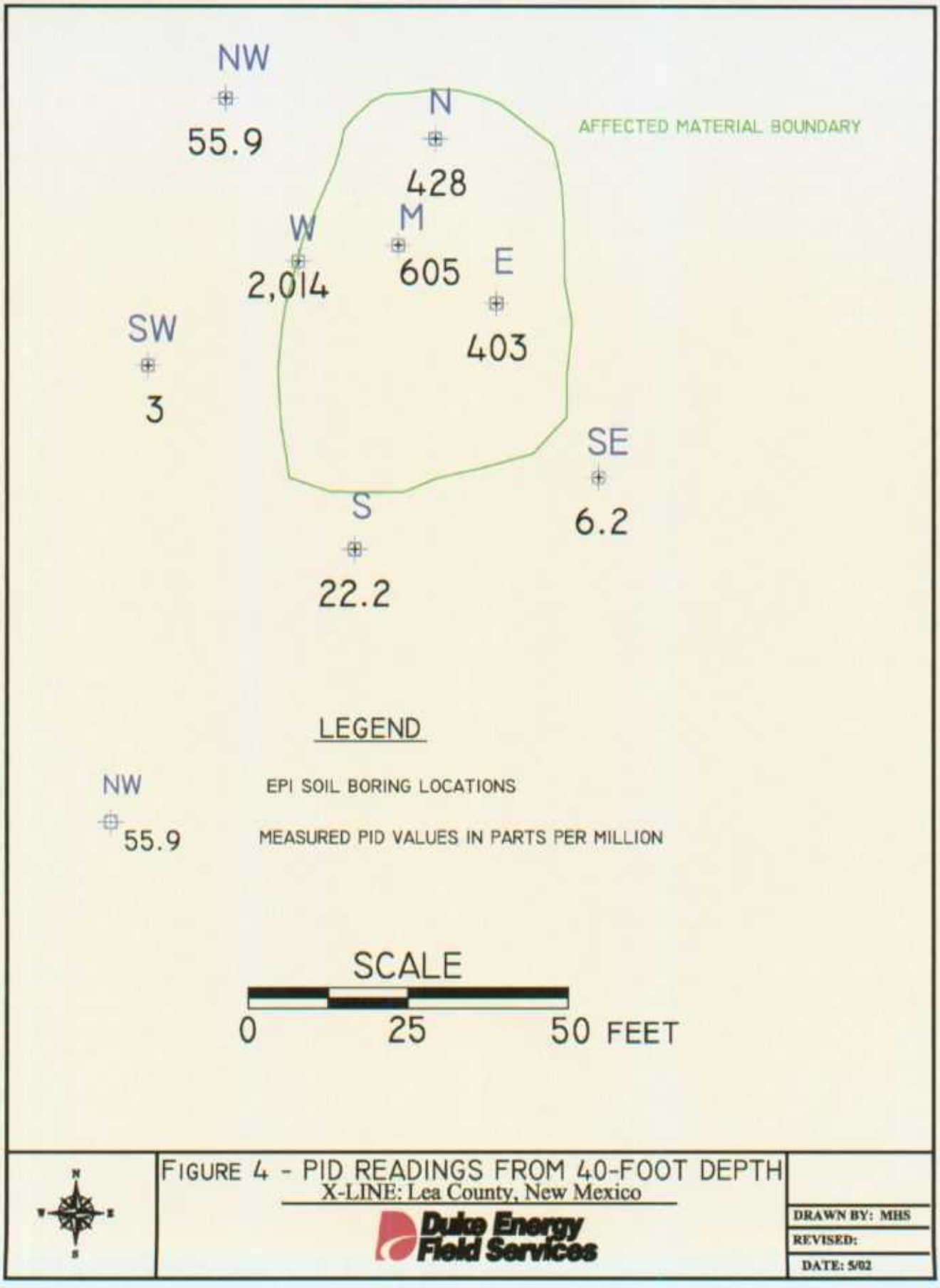


Figure 3 - PID Measurements from Borings Outside Affected Area
X-LINE: Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: May 2002


NW
55.9
N
428
AFFECTED MATERIAL BOUNDARY
W
2,014
M
605
E
403
SW
3
SE
6.2
S
22.2
LEGEND
NW
55.9
EPI SOIL BORING LOCATIONS
MEASURED PID VALUES IN PARTS PER MILLION
SCALE
0
25
50 FEET
N
W
E
S
FIGURE 4 - PID READINGS FROM 40-FOOT DEPTH
X-LINE: Lea County, New Mexico
Duke Energy Field Services
DRAWN BY: MHS
REVISED:
DATE: 5/02

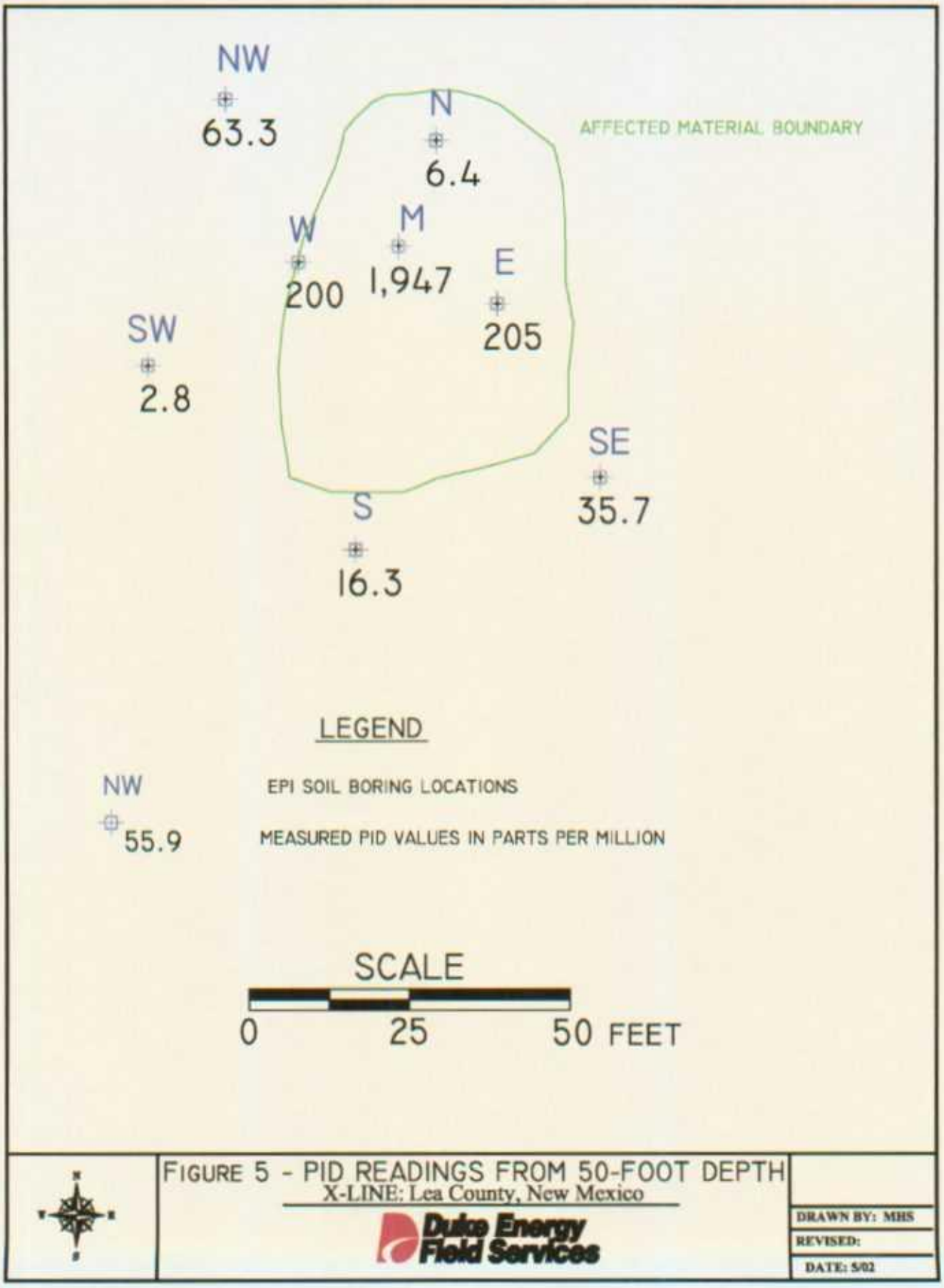


FIGURE 5 - PID READINGS FROM 50-FOOT DEPTH
X-LINE: Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: 5/02

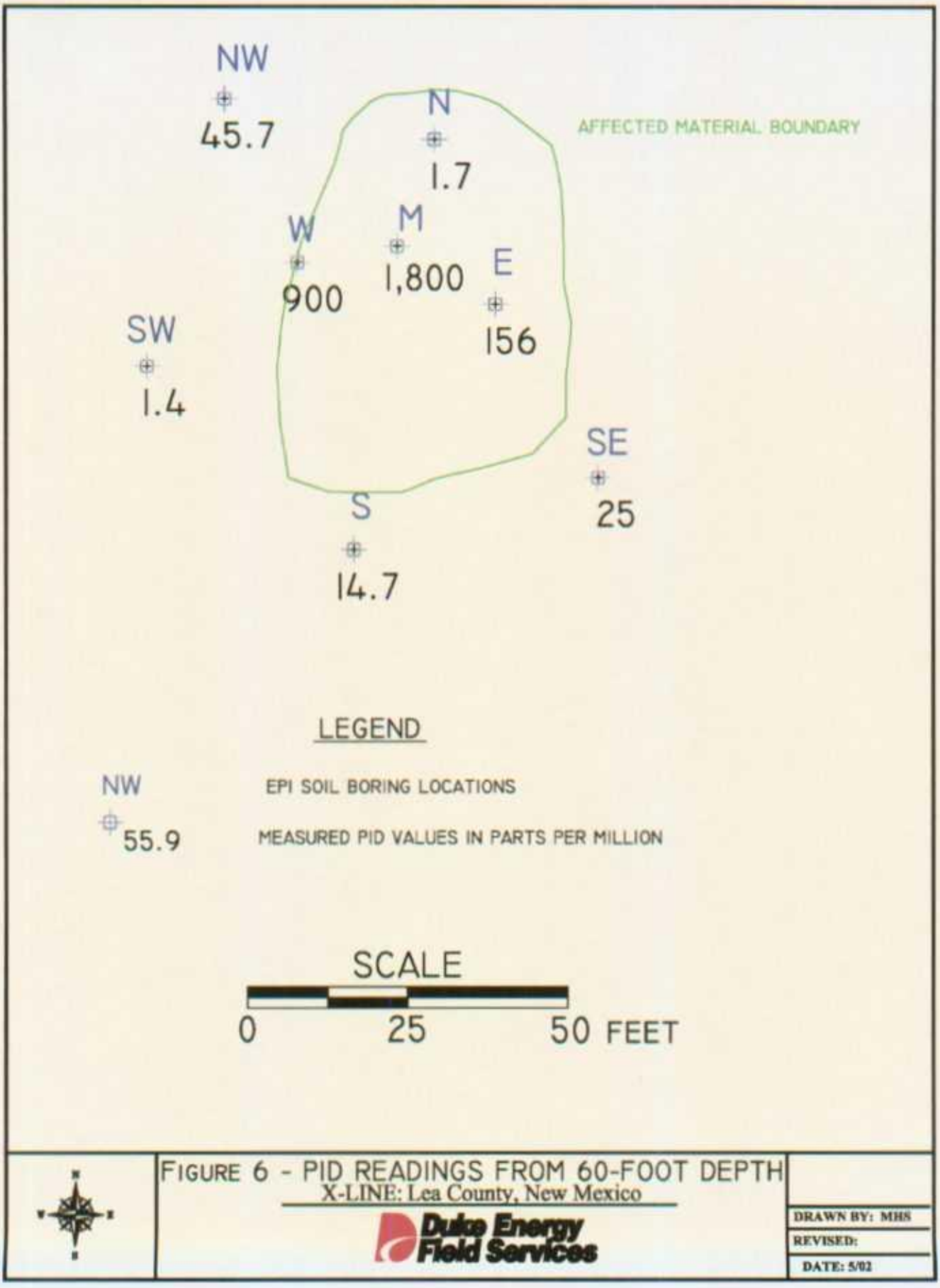
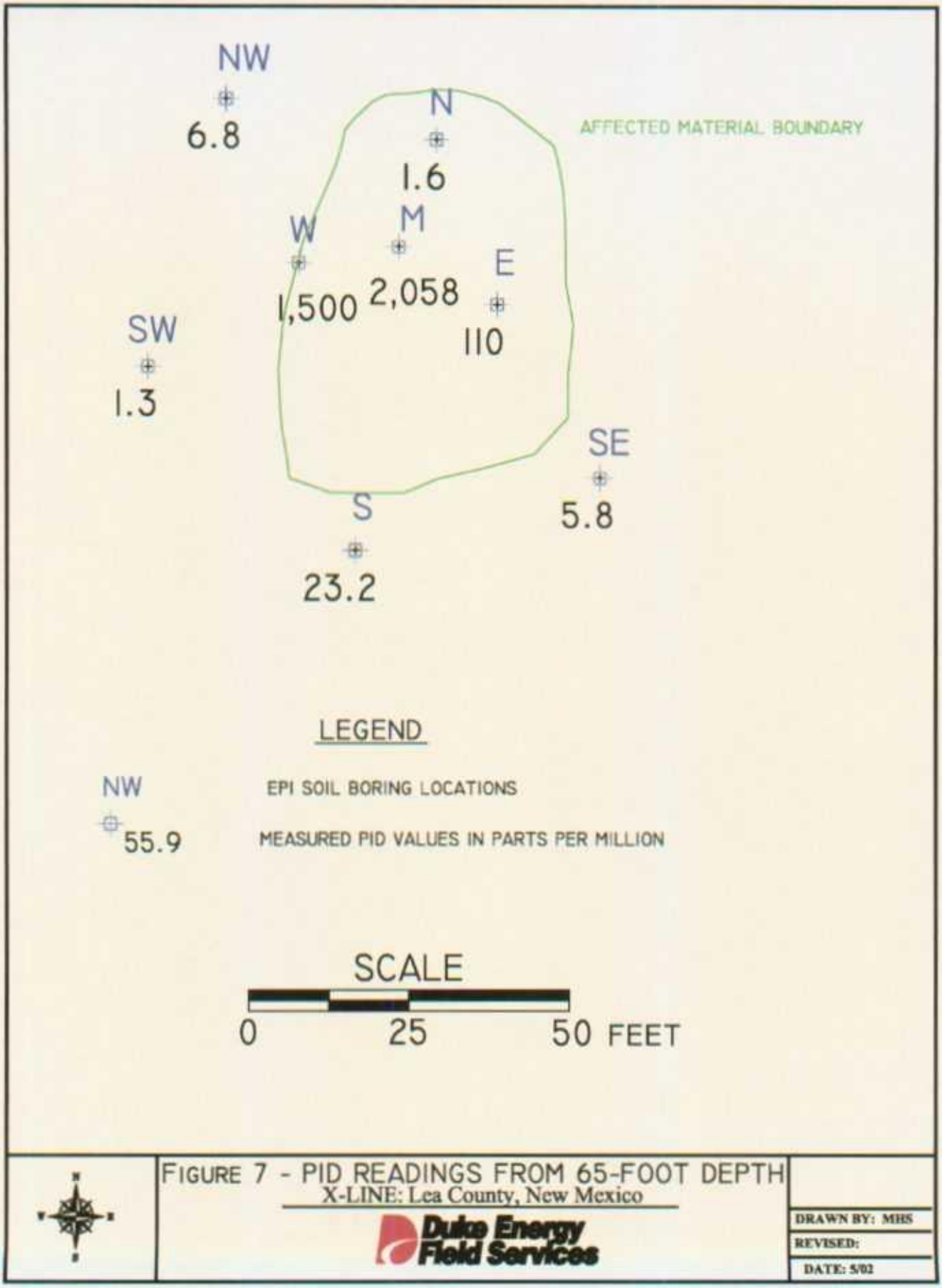


FIGURE 6 - PID READINGS FROM 60-FOOT DEPTH
X-LINE: Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: 5/02


NW
6.8
N
1.6
AFFECTED MATERIAL BOUNDARY
W
M
E
1,500
2,058
110
SW
1.3
SE
5.8
S
23.2
LEGEND
NW
EPI SOIL BORING LOCATIONS
55.9
MEASURED PID VALUES IN PARTS PER MILLION
SCALE
0
25
50 FEET
FIGURE 7 - PID READINGS FROM 65-FOOT DEPTH
X-LINE: Lea County, New Mexico
Duke Energy Field Services
DRAWN BY: MHS
REVISED:
DATE: 5/02

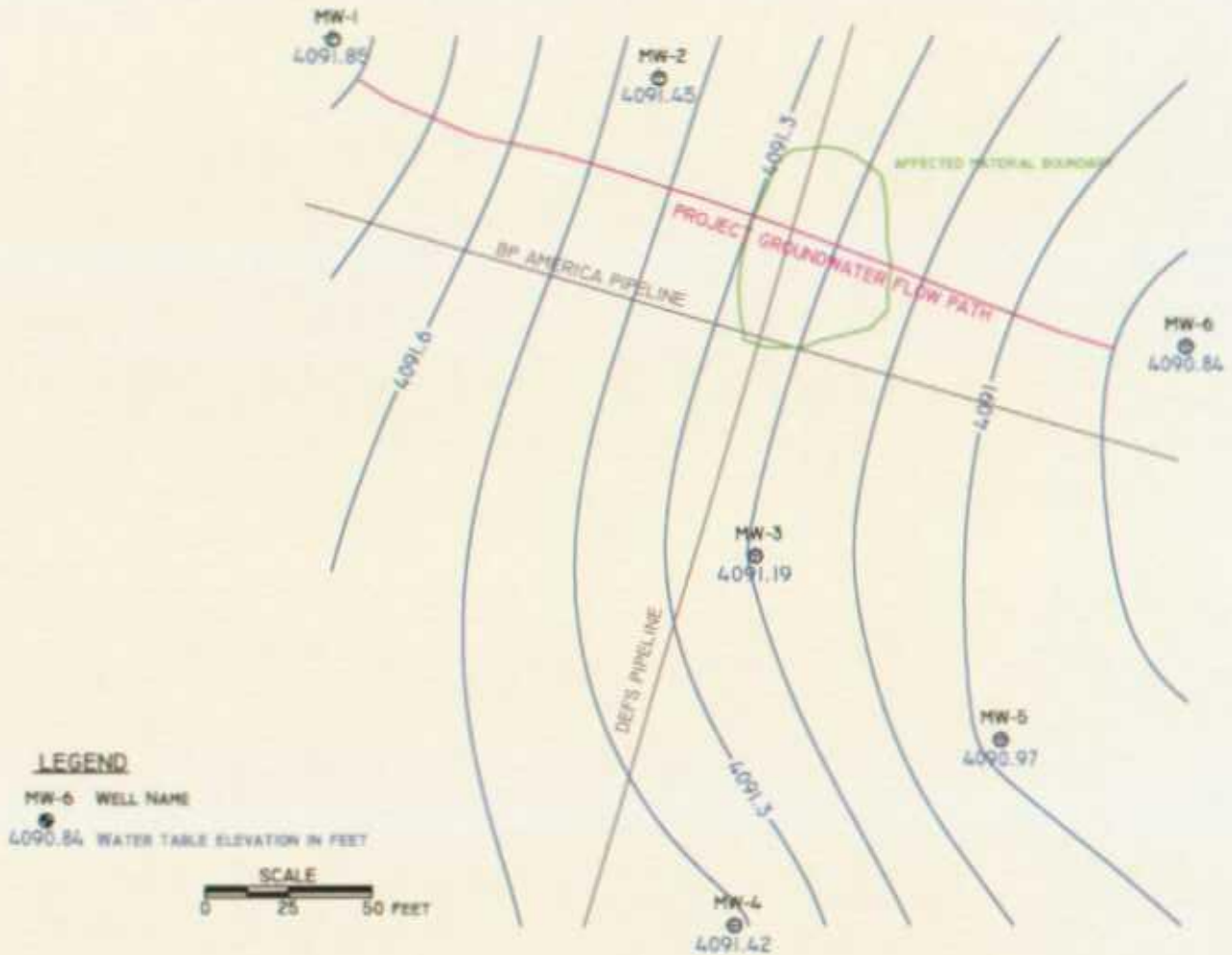


Figure 8 - Contour of May 17, 2002 Water Table Elevations
X-LINE: Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: May 2002

Figure 9 - Contour of May 21, 2002 Water Table Elevations
X-LINE: Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: May 2002

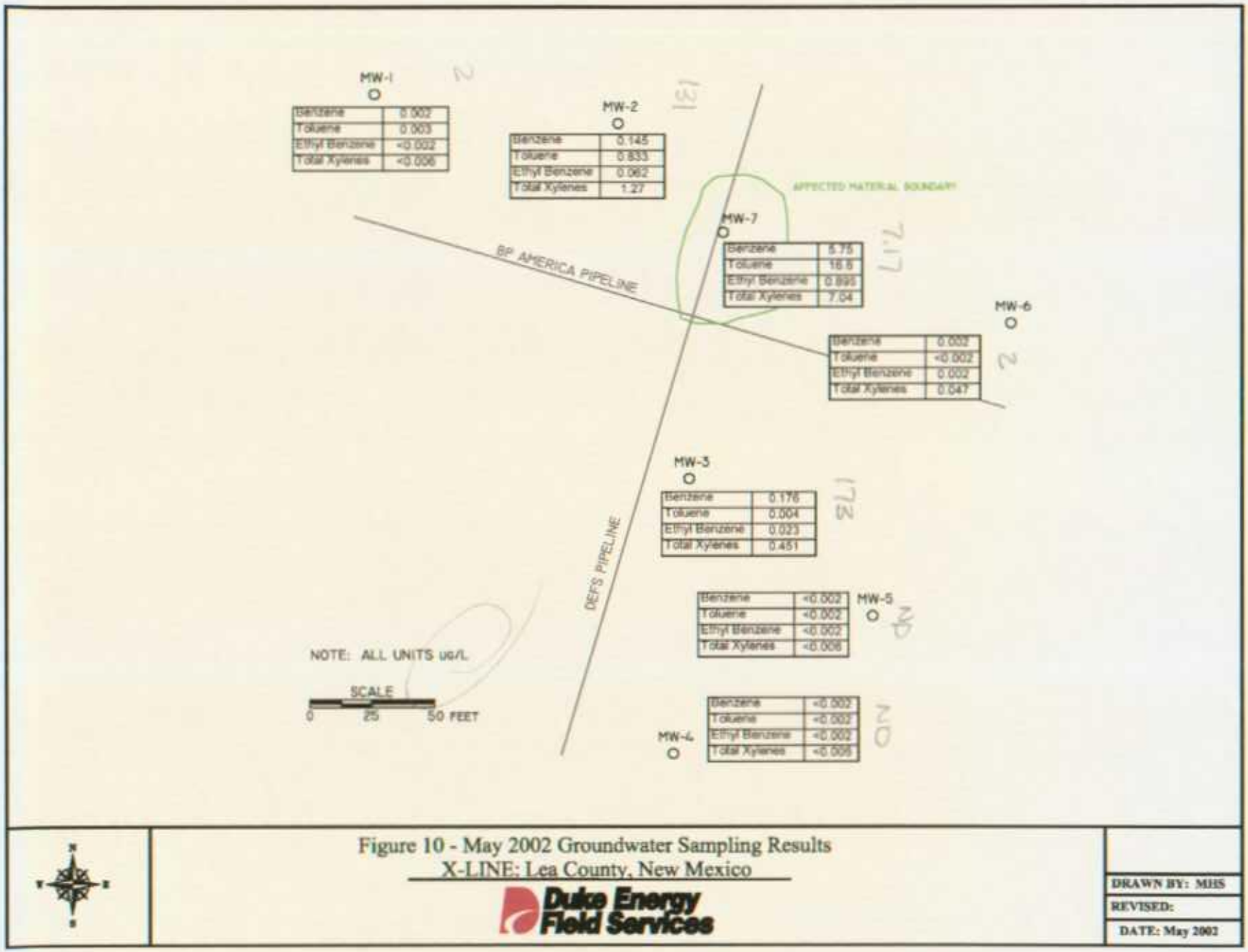


Figure 10 - May 2002 Groundwater Sampling Results
X-LINE; Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: May 2002

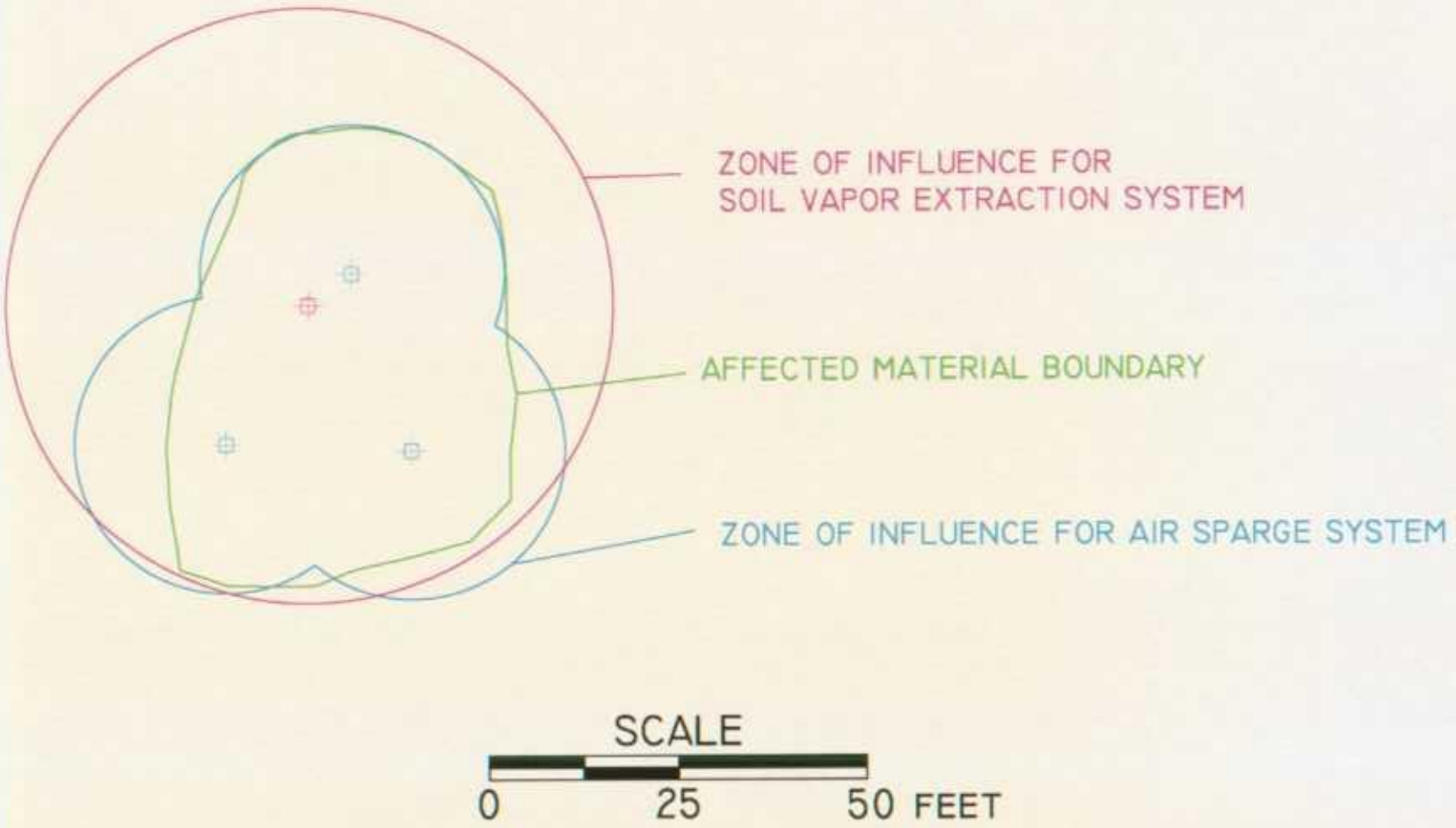


Figure 11 - Design Assumptions for SVE and Air Sparge Systems
X-LINE: Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: May 2002

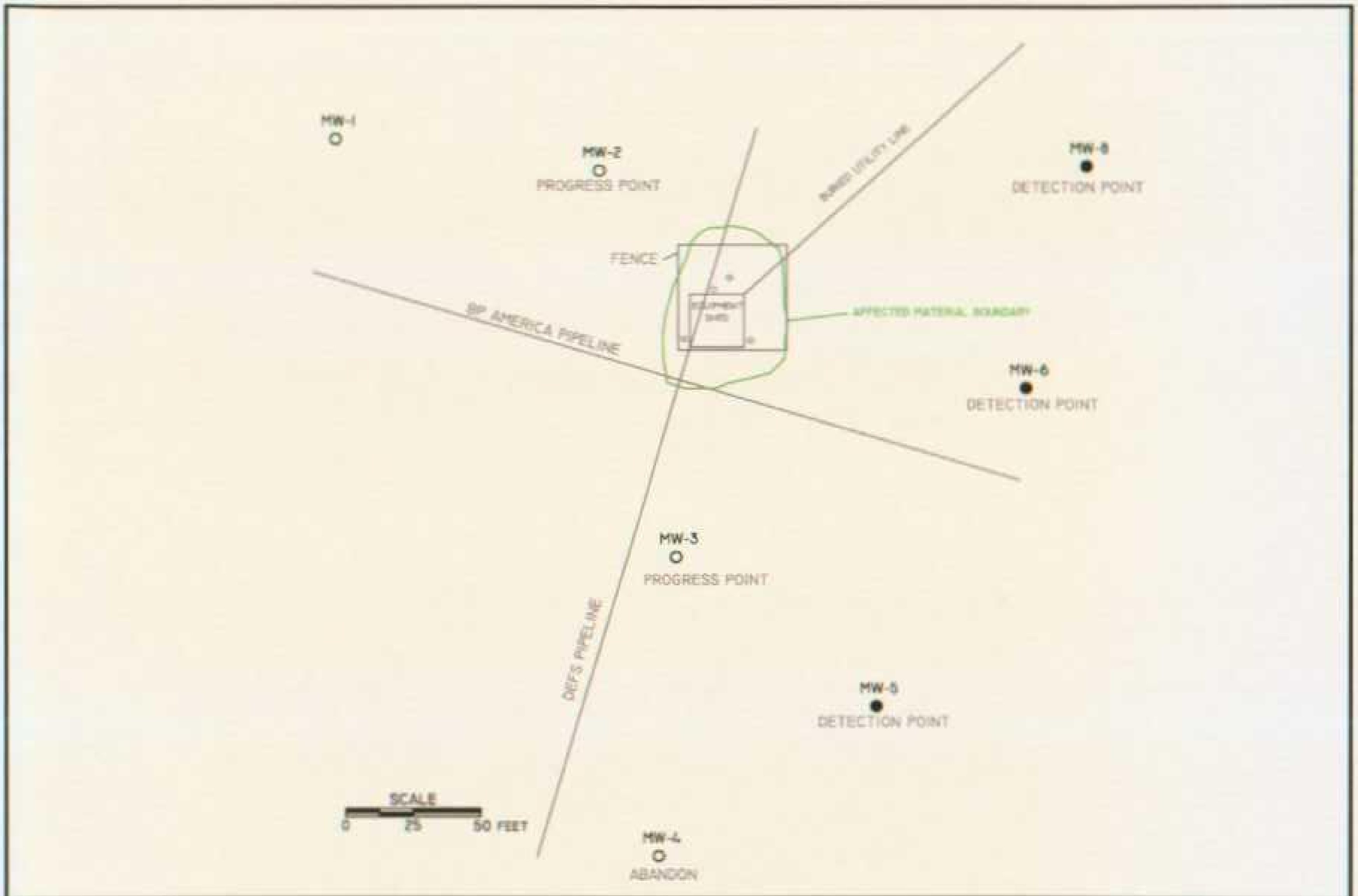


Figure 12 - System Layout for SVE and Air Sparge Systems
X-LINE: Lea County, New Mexico

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: May 2002

ATTACHMENT

VADSAT MODELING RESULTS

Risk/Exposure Assessment
Duke Energy Field Services
X-Line Etcheverry Ranch, Lea County, New Mexico

CONTAMINATED SOIL DISTRIBUTION

Initially, it was determined that the contaminated soil column was approximately 40 feet in diameter at the surface tapering to approximately 20 feet in diameter at 37 feet below ground surface ('bgs) persisting at that diameter to 74.8'bgs, the ground water interface. All contaminated soil, approximately 6,746 yd^3, down to the 37'bgs interval was removed to a disposal facility.

ALTERNATIVE SOIL REMEDIATION STRATEGIES

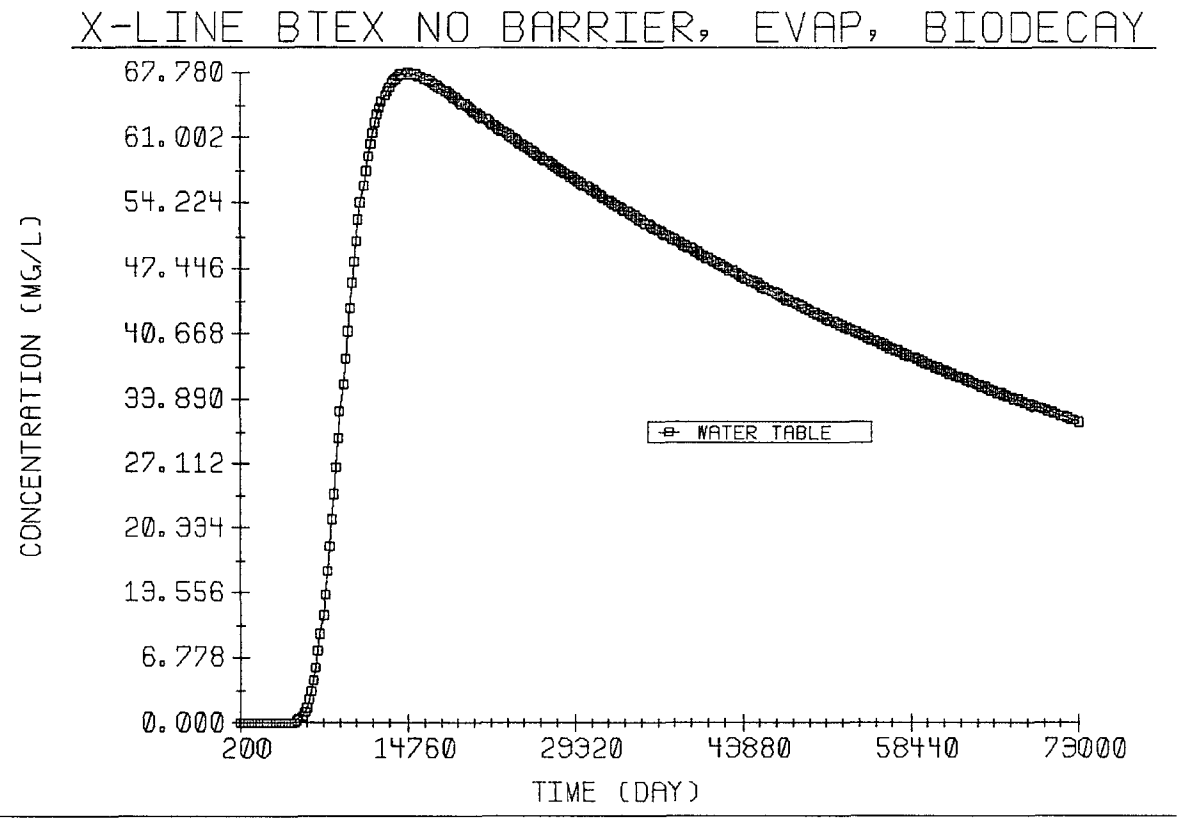
Contaminated soil remaining is estimated to be approximately 560 cubic yards. Alternative remediation strategies include; removal, installation of a Soil Vapor Extraction system and/or to isolate the contaminated soil with a subsurface impermeable engineered clay barrier. The proposed compacted clastic clay barrier will extend at least 5 feet beyond the contaminated soil perimeter in the bottom of the excavation and be at least 12" thick following compaction. The clay will have a minimum permeability of $1x10^{-5}$ cm/sec. Acceptable compaction must be greater than 95.0% of its Proctor Density. The foot thick barrier will be installed in two 6-inch layers. The barrier will be installed at approximately the 35-37'bgs interval and will ensure that the barrier will not be eroded or penetrated inadvertently. A conservative ground water risk/exposure assessment was conducted to demonstrate the effectiveness of the clay barrier in isolating further ground water impact by the remaining hydrocarbon source term.

RISK/EXPOSURE ASSESSMENT

The computer simulated assessment was conducted using VADSAT Version 3.0, A Monte Carlo Model for Assessing the Effects of Soil Contamination on Groundwater Quality, developed by: Environmental Systems and Technologies Inc., Blacksburg, Virginia for the American Petroleum Institute in 1995. The Monte Carlo probabilistic method was not used to simulate transport and subsequent ground water impact/exposure; rather, simulations were conducted deterministically. Input parameters/variables are included as Appendix I. The most conservative hydrogeologic parameters, i.e., sand and gravel lithology that favors source term transport, were used in the simulations. Likewise, the "net infiltration" rate for the area was inputted at +0.001 m/day, even though, in the area it is a negative value, i.e., evaporation exceeds precipitation. Also, Benzene, being the most mobile of the BTEX compounds, i.e., BTEX = Benzene, Toluene, Ethyl Benzene, Xylenes was inputted as the chemical species at a value equal to the mass sum of the BTEX compounds. This approach also serves to make the simulations more conservative. Below are the outcome charts for the different scenarios. The ground water interface below the remaining contaminated soil column was selected as the potential "receptor" of the constituents of concern. Even though the model will assess down gradient horizontal impacts, it was not considered credible due to the flatness of the ground water table and not simulated.

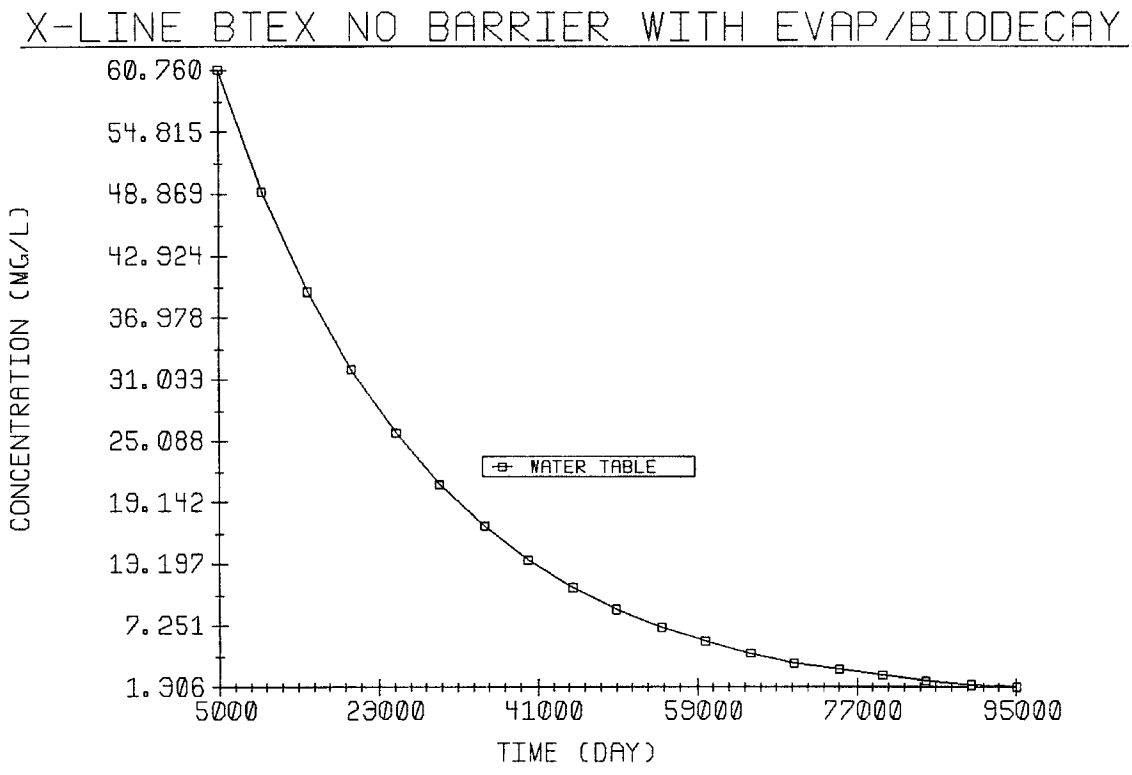
SIMULATION 1: NO BARRIER, EVAPORATION, OR BIODECAY

This simulation is the least conservative and only remotely realistic, not allowing for natural attenuation of the source term through evaporation or biodecay. The chart below illustrates that ground water will be impacted at a maximum level of 67.78 mg/Kg in approximately 410 years.



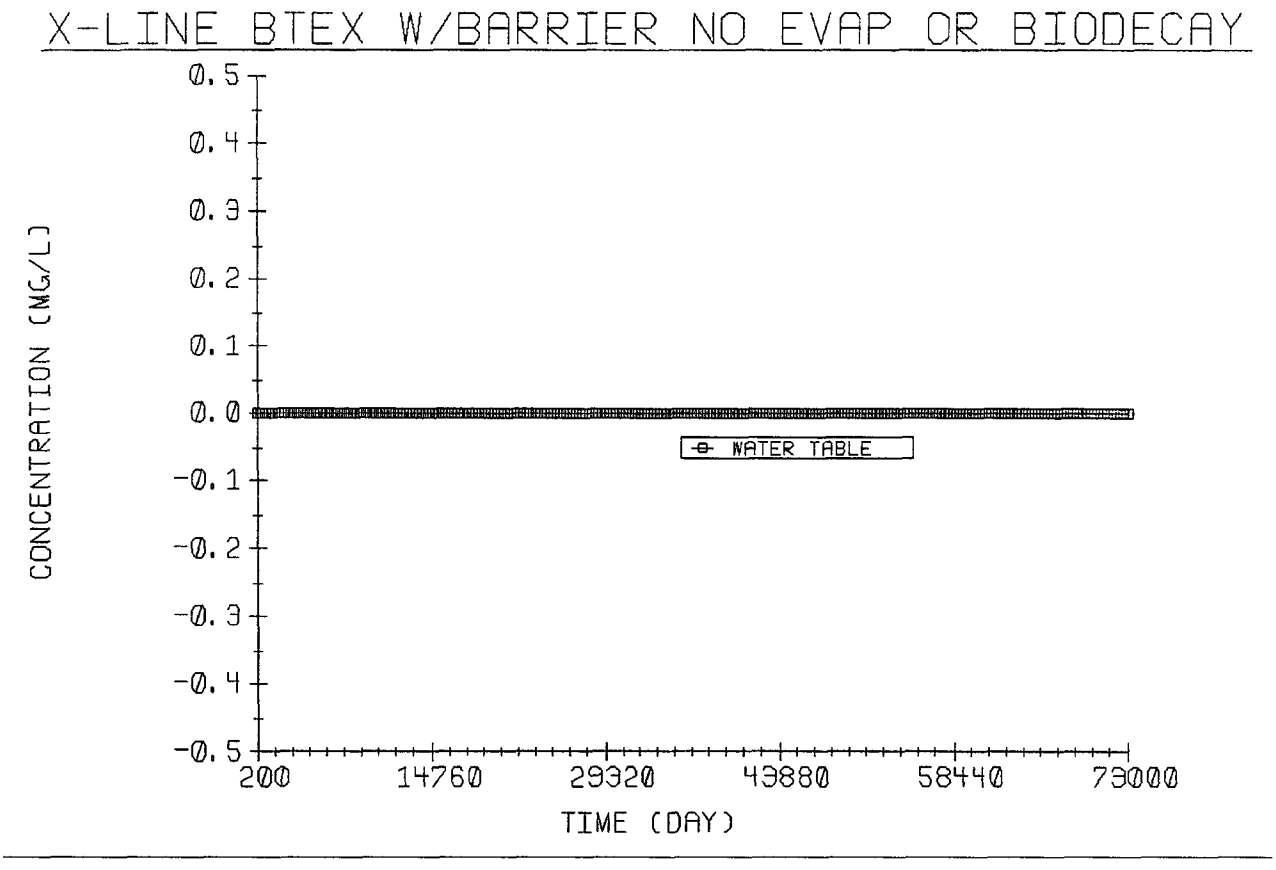
SIMULATION II: NO BARRIER WITH EVAPORATION AND BIODECAY

This simulation allows for evaporation and biodecay of the source term and illustrates the gradual natural attenuation of the source term.



SIMULATION III: WITH ENGINEERED CLAY BARRIER WITH NO EVAPORATION OR BIODECAY

This simulation illustrates that, even with the conservative input parameters and not allowing for natural attenuation through evaporation and biodecay that the barrier will be effective in eliminating the vertical transport mechanism and adequately isolate the remaining source term.



Conclusion

The installation of an engineered barrier will adequately protect ground water from future impacts by permanently interrupting the vertical transport mechanism and serve to isolate the hydrocarbon source term from the environment.

Appendix I

VADSAT PROJECT TITLE: Duke X-Line

SOURCE AND CHEMICAL DATA ****

FKSWM, MEAN WASTE ZONE SAT. CONDUC. (m/day)	=	0.00000
SDFKSW, STD.DEV. OF WASTE ZONE SAT. CONDUC.	=	0.00000
DEPTHM, MEAN THICKNESS OF WASTE ZONE (m)	=	11.52100
DEPSTD, STD.DEV. OF THICKNESS OF WASTE ZONE	=	0.00000
AREAM, MEAN WASTE ZONE AREA (m^2)	=	37.16100
STDA, STD.DEV. OF WASTE ZONE AREA	=	0.00000
RLWM, MEAN L/W RATIO (-)	=	1.00000
STDRLW, STD.DEV. OF L/W RATIO	=	0.00000
CVRTHM, MEAN VALUE OF COVER THICKNESS (m)	=	4.57200
CVRTHS, STD.DEV. OF COVER THICKNESS	=	0.00000
KOCM, MEAN ORG. CARBON PARTITION COEF (cm^3/g)	=	83.20000
STDKOC, STD.DEV. OF ORG.CARBON PARTITION COEF	=	0.00000
FMOLM, MEAN INIT.VOL.FRAC. OF CONTAMINANT(-)	=	0.03267
FMOLSTD, STD.DEV. OF VOL.FRAC. OF CONTAMINANT	=	0.00000
CMFM, MASS OF CONTAMINANT PER MASS OF WASTE(mg/kg)	=	321.14001
CMFSD, STD.DEV. OF MASS CONTAMINANT PER MASS WASTE	=	0.00000
HCCONM, HYDCARBON MASS FRAC. IN WASTE (mg/kg)	=	9830.00000
HCCONS, STD OF HYDCARBON MASS FRAC. IN WASTE	=	0.00000

CHEMICAL SPECIES: Benzene

MOLW, MOLECULAR WT. OF CONTAMINANT (g/mole)	=	78.10000
AVERMW, AVG. MOL. WT. OF OILY WASTE (g/mole)	=	100.00000
RHO, DENSITY OF CONTAMINANT (g/cm^3)	=	0.87600
RHOG, AVERAGE DENSITY OF HYDROCARBON (g/cm^3)	=	0.90000
SOL, AQUEOUS SOLUB. OF CONTAMINANT (g/m^3)	=	1790.00000
HENRYC, HENRY'S CONSTANT (-)	=	0.23000
DIFFA, DIFFUSION COEF. IN FREE AIR (m^2/day)	=	0.77000

HYDROGEOLOGICAL PROPERTIES

UNSATURATED ZONE INPUT PARAMETERS

GAMMAM, MEAN UNSAT ZONE DECAY COEF (1/day)	=	0.00001
STDGAM, STD.DEV. OF UNSAT ZONE DECAY COEF	=	0.00000
UNFOCM, MEAN UNSAT ZONE ORGANIC CARBON FRACTION (-)	=	0.00650
UNFOCS, STD.DEV. OF UNSAT ZONE ORGANIC CARBON FRAC.	=	0.00000
FKSW, MEAN SAT. CONDUCTIVITY (m/day)	=	7.12800

STDFKS, STD.DEV. OF SAT. CONDUCTIVITY = 0.000

DISTM, MEAN DEPTH TO GROUNDWATER (m) = 0.03000
STDDST, STD.DEV. OF DEPTH TO GROUNDWATER = 0.00000

UNPORM, MEAN VADOSE ZONE POROSITY (-) = 0.38000
SUNPOR, STD.DEV. OF VADOSE ZONE POROSITY = 0.00000

PARNM, MEAN VALUE OF VG PARAMETER N (-) = 1.09000
SDPARN, STD.DEV. OF VG PARAMETER N = 0.00000

RESWCM, MEAN RESIDUAL WATER CONTENT (-) = 0.06800
RESWCS, STD.DEV. OF RESIDUAL WATER CONTENT = 0.00000

ALFINM = 0, UNSAT DISPERSIVITY CALCULATED INTERNALLY

** SATURATED ZONE INPUT PARAMETERS **

LAMBW, MEAN SAT. ZONE DECAY COEFF. (1/day) = 0.00010
SLAMB, STD.DEV. OF SAT. ZONE DECAY COEFF. = 0.00000

PORM, MEAN SAT. ZONE POROSITY (-) = 0.20000
STDPOR, STD.DEV. OF SAT. ZONE POROSITY = 0.00000

FOCM, MEAN SAT. ZONE ORG. CARBON FRAC. (-) = 0.00048
STDFOC, STD.DEV. SAT. ZONE ORG. CARBON FRAC. = 0.00000

ALRLTM, MEAN DISPERS, RATIO LONG/TRANSV. (-) = 1.00000
SALRLT, STD.DEV. OF DISP. RATIO LONG/TRANSV. = 0.00000

ALRTVM, MEAN DISPERS. RATIO TRANSV/VERT. (-) = 1.00000
SALRTV, STD.DEV. OF DISP. RATIO TRANSV/VERT. = 0.00000

CONDS, SAT. HYDRAULIC COND. (m/day) = 3.04800
SCONDS, STD.DEV. OF SAT HYDRAULIC COND. = 0.00000

GRADS, HYDRAULIC GRADIENT (m/m) = 0.17000
SGRADS, STD.DEV. OF HYDRAULIC GRADIENT = 0.00000

HMEAN, MEAN AQUIFER THICKNESS (m) = 44.19600
STDH, STD.DEV. OF AQUIFER THICKNESS = 0.00000

QINM, MEAN INFILTRATION RATE (m/day) = 0.00100
QINSTD, STD.DEV. OF INFILTRATION RATE = 0.00000

LOCATION OF RECEPTORS:

	X (M)	Y (M)	Z (M)
RECEPTOR(1)	0.0	0.0	0.0
RECEPTOR(2)	1.0	1.0	0.0
RECEPTOR(3)	2.0	2.0	0.0
RECEPTOR(4)	3.0	3.0	0.0

ORIGINAL ANALYTICAL REPORTS

ANALYTICAL REPORT

Prepared for:

L.V. Sims II
Sims Environmental
P.O. Box 2630
Hobbs, NM 88240

Project:	Duke X-Line
Order#:	G0203405
Report Date:	05/23/2002

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

Sims Environmental
P.O. Box 2630
Hobbs, NM 88240
505-391-6684

Order#: G0203405
Project:
Project Name: Duke X-Line
Location: Etcheuerry Ranch

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0203405-01	GWDXL52102MW1	WATER	5/21/02	5/22/02 12:15	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 8.5 C		
0203405-02	GWDXL52102MW2	WATER	5/21/02	5/22/02 12:15	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 8.5 C		
0203405-03	GWDXL52102MW3	WATER	5/21/02	5/22/02 12:15	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 8.5 C		
0203405-04	GWDXL52102MW4	WATER	5/21/02	5/22/02 12:15	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 8.5 C		
0203405-05	GWDXL52102MW5	WATER	5/21/02	5/22/02 12:15	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 8.5 C		
0203405-06	GWDXL52102MW6	WATER	5/21/02	5/22/02 12:15	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 8.5 C		
0203405-07	GWDXL52102MW7	WATER	5/21/02	5/22/02 12:15	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 8.5 C		

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

L.V. Sims II
Sims Environmental
P.O. Box 2630
Hobbs, NM 88240

Order#: G0203405
Project:
Project Name: Duke X-Line
Location: Etcheverry Ranch

Lab ID: 0203405-01
Sample ID: GWDXL52102MW1

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0001780-02		5/22/02 11:52	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.002	0.001
Ethylbenzene	<0.001	0.001
Toluene	0.002	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Lab ID: 0203405-02
Sample ID: GWDXL52102MW2

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0001780-02		5/22/02 19:42	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.131	0.001
Ethylbenzene	0.054	0.001
Toluene	0.563	0.001
p/m-Xylene	0.824	0.001
o-Xylene	0.279	0.001

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

L.V. Sims II
Sims Environmental
P.O. Box 2630
Hobbs, NM 88240

Order#: G0203405
Project:
Project Name: Duke X-Line
Location: Etcheuerry Ranch

Lab ID: 0203405-03
Sample ID: GWDXL52102MW3

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0001780-02		5/22/02 10:04	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.173	0.001
Ethylbenzene	0.017	0.001
Toluene	0.004	0.001
p/m-Xylene	0.383	0.001
o-Xylene	0.001	0.001

Lab ID: 0203405-04
Sample ID: GWDXL52102MW4

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0001780-02		5/22/02 12:14	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	<0.001	0.001
Ethylbenzene	<0.001	0.001
Toluene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

L.V. Sims II		Order#:	G0203405
Sims Environmental		Project:	
P.O. Box 2630		Project Name:	Duke X-Line
Hobbs, NM 88240		Location:	Etcheverry Ranch

Lab ID: 0203405-05
Sample ID: GWDXL52102MW5

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0001780-02		5/22/02 20:48	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	<0.001	0.001
Ethylbenzene	<0.001	0.001
Toluene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Lab ID: 0203405-06
Sample ID: GWDXL52102MW6

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0001780-02		5/22/02 21:10	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.002	0.001
Ethylbenzene	0.002	0.001
Toluene	0.001	0.001
p/m-Xylene	0.041	0.001
o-Xylene	<0.001	0.001

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

L.V. Sims II		Order#:	G0203405
Sims Environmental		Project:	
P.O. Box 2630		Project Name:	Duke X-Line
Hobbs, NM 88240		Location:	Etcheverry Ranch

Lab ID: 0203405-07
Sample ID: GWDXL52102MW7

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0001780-02		5/22/02 12:36	1	25	CK	8021B

Parameter	Result mg/L	RL
Benzene	7.17	0.025
Ethylbenzene	1.06	0.025
Toluene	20.6	0.025
p/m-Xylene	6.72	0.025
o-Xylene	1.98	0.025

Approval: Raland K Tuttle 5-23-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: L. V. Sims II
Company Name: Sims Environmental
Company Address: P.O. Box 2630
City/State/Zip: Hobbs, NM 88240
Telephone No: 505.393.3024
Fax No: 505.391.6684
Sampler Signature: Cody Sain

Project Name: Duke X-Line
Project #:
Project Loc: Etcheverry Ranch
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Water	Sludge	Soil	Other (specify)	TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)	Standard TAT
[illegible]-01	GWDXL52102MW1	5-21-02		2	✓		✓					✓											✓		✓
02	GWDXL52102MW2			2	✓		✓					✓											✓		✓
03	GWDXL52102MW3			2	✓		✓					✓											✓		✓
04	GWDXL52102MW4			2	✓		✓					✓											✓		✓
05	GWDXL52102MW5			2	✓		✓					✓											✓		✓
06	GWDXL52102MW6			2	✓		✓					✓											✓		✓
07	GWDXL52102MW7			2	✓		✓					✓											✓		✓

Special Instructions: Chain of Custody Requested   FAX Results

Relinquished by:	Date	Time	Received by:	Date	Time
Cody Sain	5-22-02	12:15	Received by ELOT: [signature]	5/22/02	1215

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 8.5 °C
Laboratory Comments:

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1158
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 05/21/02
Reporting Date: 05/23/02
Project Owner: DUKE ENERGY
Project Name: DUKE X LINE
Project Location: NOT GIVEN

Sampling Date: 05/21/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		05/21/02	05/21/02	05/21/02	05/21/02
H6758-1	WDXL52102MW1	0.002	0.003	<0.002	<0.006
H6758-2	WDXL52102MW2	0.145	0.633	0.062	1.27
H6758-3	WDXL52102MW3	0.176	0.004	0.023	0.451
H6758-4	WDXL52102MW4	<0.002	<0.002	<0.002	<0.006
H6758-5	WDXL52102MW5	<0.002	<0.002	<0.002	<0.006
H6758-6	WDXL52102MW6	0.002	<0.002	0.002	0.047
H6758-7	WDXL52102CMW	5.75	16.6	0.895	7.04
Quality Control		0.100	0.099	0.103	0.299
True Value QC		0.100	0.100	0.100	0.300
% Recovery		100	98.6	103	99.6
Relative Percent Difference		8.9	12.1	3.1	3.4

METHOD: EPA SW-846 8260

Chemist

5/23/02
Date

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 05/21/02
Reporting Date: 05/28/02
Project Number: NOT GIVEN
Project Name: DUKE X LINE
Project Location: NOT GIVEN

Sampling Date: 05/21/02
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: GP
Analyzed By: AH

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:		05/22/02	05/22/02	05/22/02	05/22/02	05/22/02	05/22/02	05/22/02	05/22/02
H6758-3	WDXL52102MW3	<0.01	<0.05	<1	<0.05	0.283	<0.05	<0.002	<0.01
Quality Control		0.0462	4.968	25.11	0.989	4.967	4.996	0.0109	0.158
True Value QC		0.0500	5.000	25.00	1.000	5.000	5.000	0.0100	0.150
% Recovery		92.4	99.4	100	98.9	99.4	100	109	106
Relative Percent Difference		3.0	0.2	7.2	0.5	0.2	0.3	9.0	1.6
METHODS: EPA 600/4-79-020		206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2
METHODS:	SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

Chemist

5/28/02
Date

H6758M.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 05/21/02
Reporting Date: 06/07/02
Project Number: NOT GIVEN
Project Name: DUKE X LINE
Project Location: NOT GIVEN

Sampling Date: 05/21/02
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: GP
Analyzed By: GP

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:		05/24/02	05/23/02	05/24/02	05/23/02	05/24/02	05/23/02	05/23/02	06/05/02
H6758-6	WDXL52102MW6	<0.01	<0.05	<1	<0.05	<0.1	<0.05	<0.002	<0.05
Quality Control		0.165	3.083	49.57	1.957	1.861	3.03	0.0109	0.051
True Value QC		0.150	3.000	50.00	2.000	2.000	3.00	0.0100	0.050
% Recovery		110	103	99.1	97.9	93.1	101	109	102
Relative Percent Difference		6.9	0.3	9.4	0.2	0.4	1.0	9.0	1.7
METHODS: EPA 600/4-79-020		206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2
METHODS:	SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

Gayle A Potter
Chemist

06/05/2002
Date

H6758M2P.XLS

2111 B[redacted]wood, Abilene, TX 79603 101 East Marland, Hobbs, NM [redacted]
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

[redacted]

ny Name: Environmental Plus Inc
Manager: Pat McCasland
s: 2100 Ave O
Eunice State: N.M Zip: 88231
#: 505-394-3481 Fax #: 505-394-8601
t #:
Project Owner: Duke Energy
t Name: Duke X Line
t Location:
ler Name: Bradley Blevins

BILL TO
P.O. #: Duke
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

b I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX 8020	Metals on MW3	Verrac - PAT	METALS on MW 6 also	Vervon - Pat
16758-1	WDXL52102MW1	G	2	X							X	X	5-21-02	10:40	X				
	WDXL52102MW1	G	1	X							X	X	5-21-02	10:41		(X)			
16758-2	WDXL52102MW2	G	2	X							X	X	5-21-02	12:00	X				
	WDXL52102MW2	G	1	X							X	X	5-21-02	12:01		(X)		X	
16758-3	WDXL52102MW3	G	2	X							X	X	5-21-02	12:55	X				
	WDXL52102MW3	G	1	X							X	X	5-21-02	12:56		X			
16758-4	WDXL52102MW4	G	2	X							X	X	5-21-02	1:45	X				
	WDXL52102MW4	G	1	X							X	X	5-21-02	1:46		(X)			
16758-5	WDXL52102MW5	G	2	X							X	X	5-21-02	2:30	X				
	WDXL52102MW5	G	1	X							X	X	5-21-02	2:31		(X)			

NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

pler Relinquished: Bradley Blevins — Date: 5-21-02 Time: — Received By:

quished By: — Date: 05/21/2002 Time: 4:30 pm — Received By: (Lab Staff) B. Potter

livered By: (Circle One)
pler - UPS - Bus - Other:

Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No

CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

my Name: Environmental 9145 Inc
Manager: Pat McCasland
s: 2100 Ave Q
Eunice State: N.M Zip: 88231
#: 505-394-3481 Fax #: 505-394-2601
t #: Project Owner: Duke Energy
t Name: Duke X Line
t Location:
ler Name: Freddy Bl

BILL TO

P.O. #: Duke Energy
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

Btex 8020
Heavy Metals

b I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME		
6758-6	CWDXL52102MW6	G	2	X							X	X	5-21-02	2:55	X	
	CWDXL52102MWC	G	-	X							X	X	5-21-02	2:56		X
6758-7	CWDXL52102CMW	G	2	X							X	X	5-21-02	3:30	X	
	CWDXL52102CMW	G	1	X							X	X	5-21-02	3:30		(X)

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Terms and Conditions: Interest will be charged on all accounts unpaid after 30 days past date of the invoice at 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

pler Relinquished:

Date: 5-21-02
Time:

Received By:

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

quished By:

Date: 05/21/2002
Time: 4:30 PM

Received By: (Lab Staff)

livered By: (Circle One)

pler - UPS - Bus - Other:

Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No

CHECKED BY: (Initials)

Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 04/26/02
Reporting Date: 04/29/02
Project Number: NOT GIVEN
Project Name: DUKE X-LINE
Project Location: NOT GIVEN

Sampling Date: 04/26/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		04/26/02	04/26/02	04/26/02	04/26/02
H6704-1	MW-6	<0.002	<0.002	0.004	0.123
Quality Control		0.106	0.104	0.110	0.319
True Value QC		0.100	0.100	0.100	0.300
% Recovery		106	104	110	106
Relative Percent Difference		1.8	3.6	8.6	3.0

METHOD: EPA SW-846 8260

Chemist

4/29/02
Date

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Environmental Plus, Inc.
Project Manager:	ATTN: PAT McCASLAND
Address:	P.O. BOX 1558
City:	EUNICE, NM 88231 State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	Duke X-Line
Project Location:	
Sampler Name:	EJ Harper

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State: Zip:	
Phone #:	
Fax #:	

ANALYSIS REQUEST

BTEX 8021/8260

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME
H6104-1	MW-6	G	2	✓							✓		4/26/02	1:15 PM

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collection, including attorney's fees.

Sampler Relinquished: Eddie J Harper	Date:	Received By:	Phone Result: ☐ Yes ☐ No
	Time:		Fax Result: ☒ Yes ☐ No
Relinquished By:	Date: 4/26/02	Received By: (Lab Staff) Amy Hill	REMARKS: CoC requested / FAX
	Time: 2:45		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition: Temp. °C / Intact? ☐ Yes ☐ No	Checked By: (Initials)

† Cardinal cannot accept verbal changes. Please fax written changes to (505) 393-2476.

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 04/25/02
Reporting Date: 04/29/02
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Analysis Date: 04/26/02
Sampling Date: 04/24-04/2502
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	F^- (mg/L)
H6701-1	MW-1	0.30
H6701-3	MW-5	0.15
H6701-5	MW-2	<0.05
Quality Control		1.13
True Value QC		1.00
% Recovery		113
Relative Percent Difference		1.6

METHOD: Standard Methods 4500-F^-D

Amy Hill
Chemist

4-29-02
Date

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 04/25/02
Reporting Date: 04/29/02
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 04/24-04/2502
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	TOTAL Fe (ppm)	TOTAL Mn (ppm)
ANALYSIS DATE:		04/29/02	04/29/02
H6701-1	MW-1 FILTERED	<1	<0.1
H6701-1	MW-1 UNFILTERED	1.97	<0.1
H6701-3	MW-5 FILTERED	<1	<0.1
H6701-3	MW-5 UNFILTERED	9.70	<0.1
H6701-5	MW-2 FILTERED	<1	0.314
H6701-5	MW-2 UNFILTERED	2.70	0.331
Quality Control		4.622	4.995
True Value QC		5.000	5.000
% Recovery		92.4	99.9
Relative Percent Difference		0.3	0.4

METHODS EPA 600/4-79-020, 236.1, 243.1

Amy Hill
Chemist

4-29-02
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
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ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 04/25/02
Reporting Date: 04/29/02
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 04/24-04/2502
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		04/26/02	04/26/02	04/26/02	04/26/02	04/26/02	04/26/02
H6701-1	MW-1	29	69	18	2.72	744	151
H6701-3	MW-5	35	69	22	2.24	719	151
H6701-5	MW-2	28	73	34	2.42	807	178
Quality Control		NR	48.3	50.2	5.21	1489	NR
True Value QC		NR	50.0	50.0	5.00	1413	NR
% Recovery		NR	96.5	100	105	105	NR
Relative Percent Difference		NR	0	0	1.2	0.3	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		04/26/02	04/26/02	04/26/02	04/26/02	04/26/02	04/29/02
H6701-1	MW-1	52	85	0	184	7.34	384
H6701-3	MW-5	56	108	0	184	7.32	352
H6701-5	MW-2	56	125	0	217	7.26	447
Quality Control		1000	52.43	NR	948	7.03	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		100	105	NR	94.8	100	NR
Relative Percent Difference		4.0	0.2	NR	2.7	0.3	8.1
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Amy Hill
Chemist

4-29-02
Date

H6701a

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 04/25/02
Reporting Date: 04/29/02
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Analysis Date: 04/29/02
Sampling Date: 04/24-04/2502
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Silica (mg/L)
H6701-1	MW-1	2.59
H6701-3	MW-5	1.73
H6701-5	MW-2	4.45
Quality Control		0.950
True Value QC		1.00
% Recovery		95.0
Relative Percent Difference		0

METHOD: EPA 600/4-79-020 370.1

Amy Hill
Chemist

4-29-02
Date

h6701S

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 04/25/02
Reporting Date: 04/29/02
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 04/24 & 04/25/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/L)	DRO (>C_{10}-C_{28}) (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		04/26/02	04/26/02	04/26/02	04/26/02	04/26/02	04/26/02
H6701-1	MW-1	<5.0	<5.0	<0.002	<0.002	<0.002	<0.006
H6701-2	MW-4	<5.0	<5.0	<0.002	<0.002	<0.002	<0.006
H6701-3	MW-5	<5.0	<5.0	<0.002	<0.002	<0.002	0.011
H6701-4	MW-3	<5.0	<5.0	0.061	<0.002	0.023	0.189
H6701-5	MW-2	<5.0	<5.0	0.025	0.106	0.013	0.380
H6701-6	MW-102	<5.0	<5.0	0.026	0.108	0.013	0.381
H6701-7	TRIP BLANK	-	-	<0.002	<0.002	<0.002	<0.006
Quality Control		23.9	23.0	0.106	0.104	0.110	0.319
True Value QC		2.5.0	25.0	0.100	0.100	0.100	0.300
% Recovery		95.6	92.0	106	104	110	106
Relative Percent Difference		1.1	5.3	1.8	3.6	8.6	3.0

METHODS: TPH GRO & DRO - EPASW-846 8015 M; BTEX - SW-846 8260.

Burgess J. A. Cooke, Ph. D.

4/29/02
Date

H6701A.XLS

CARDINAL LABORATORIES, INC.

[redacted] HAND-DELIVERED CHAIN-OF-CUSTODY AND ANALYSIS REQUEST [redacted]

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page 1 of 1

Company Name:	Environmental Plus, Inc.
Project Manager:	Pat McCasland
Address:	P.O. Box 1558
City:	Eunice State: NM Zip: 88231
Phone #:	505.394.3600 Fax #: 505.394.2601
Project #:	Project Owner:
Project Name:	
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	SAME
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	SAMPLING TIME	TPH 8015M (GRO + DRO)	~~Chlorides~~ Silica	BTEX 8260/8020	TDS	Anions/Cations Ca, Mg, Na, K, F, Cl	Alkalinity (CO_3^- / HCO_3)	Sulfate	Iron (Filtered in Lab)	Iron (Not Filtered)	Manganese (Filter in Lab)	Manganese (not Filtered)	
H6701-1	MW-1		4	X									4/24	1340	X	X	X	X	X	X	X	X	X	X	X	
-2	MW-4		2	X									4/24	1925	X		X	X								
-3	MW-5		4	X									4/25	1015	X	X	X	X	X	X	X	X	X	X	X	
-4	MW-3		2	X									4/25	1130	X		X									
-5	MW-2		4	X									4/25	1310	X	X	X	X	X	X	X	X	X	X	X	
-6	MW-102		2	X									4/25	1410	X		X									
-7	TRIP BLANK		2	X									4/25				X									

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date:	Received By:	
	Time:		
Relinquished By:	Date: 4/25/02	Received By: (Lab Staff)	
	Time: 4:15PM	Burgess A Cole	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool: ☒ Yes ☐ No; Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)	

Phone Result:	☐ Yes	☐ No	Add'l Phone #:
Fax Result:	☒ Yes	☐ No	Add'l Fax #:

REMARKS:

C of C requested

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 04/04/02
Reporting Date: 04/04/02
Project Owner: DUKE
Project Name: DUKE X LINE
Project Location: NOT GIVEN

Sampling Date: 04/04/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE	04/04/02	04/04/02	04/04/02	04/04/02
H6649-1 GWDXL4402SMW	0.073	<0.002	0.034	0.282
Quality Control	0.104	0.102	0.103	0.296
True Value QC	0.100	0.100	0.100	0.300
% Recovery	104	102	103	98.7
Relative Percent Difference	0.9	0.3	5.1	5.3

METHOD: EPA SW-846 8260

Chemist

4/4/02
Date

(915) 6 001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

ny Name:	Environmental Plus	**BILL TO**	
Manager:	Pat McCasland	P.O. #:	Same.
s:	2100 Ave O Fax	Company:	
	Eunice State: N.M. Zip: 88231	Attn:	
#:	505-394-3481 Fax #: 505-394-2601	Address:	
t #:	Project Owner: Duke	City:	
t Name:	Duke X Line	State: Zip:	
t Location:		Phone #:	
ler Name:	Bradley Blevins	Fax #:	

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX 8021
10669-1	GWDXL44025MW	G	2	X							X	X	4-4-02	10:55	X

ANALYSIS REQUEST

Relinquished:	Date: 4-4-02	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Bradley Blevins	Time: 11:00		Fax Result: ☒ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By: (Lab Staff)	REMARKS: 394-2601
	Time:		
Delivered By: (Circle One)	Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No	CHECKED BY: (Initials)	
Courier - UPS - Bus - Other:			

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CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 03/28/02
Reporting Date: 03/29/02
Project Owner: DUKE
Project Name: DUKE X LINE
Project Location: NOT GIVEN

Sampling Date: 03/28/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

LAB NUMBER SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE	03/29/02	03/29/02	03/29/02	03/29/02
H6633-1 WDXL32802ETW	2.83	9.57	1.10	8.94
Quality Control	0.108	0.105	0.108	0.310
True Value QC	0.100	0.100	0.100	0.300
% Recovery	108	105	108	103
Relative Percent Difference	0.5	0.6	0.6	<0.1

METHOD: EPA SW-846 8260

Chemist

3/29/02
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 03/28/02
Reporting Date: 03/30/02
Project Owner: DUKE
Project Name: DUKE X LINE
Project Location: NOT GIVEN

Sampling Date: 03/28/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH/BC

LAB NUMBER	SAMPLE ID	TDS (mg/L)	Cl (mg/L)
ANALYSIS DATE:		03/29/02	03/29/02
H6633-1	WDXL32802ETW	614	52
Quality Control		NR	1030
True Value QC		NR	1000
% Recovery		NR	103
Relative Percent Difference		NR	5.0

METHODS: EPA 600/4-79-02	160.1	4500-Cl B*

*Std. Methods

Chemist

3/30/02
Date

H6633A.XLS

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

A [redacted] NAL [redacted] BO [redacted] TO [redacted] S, [redacted]

211 [redacted] echwood, Abilene, TX 79603 (S[redacted] 673-7001 Fax (915) 673-7020

101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

Company Name:	Environmental Plus	**BILL TO**	
Project Manager:	Pat McCasland	P.O. #:	Duke
Address:	2100 Ave O	Company:	
City:	Eunice	State: N.M. Zip:	88231
Phone #:	505-394-3481	Fax #:	505-394-2601
Project #:		Project Owner:	
Project Name:	Duke X Line		
Project Location:			
Sampler Name:	Bradley Blum		

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TDS	Btex 8021b	Chlorides								
H6633-1	CUDXL32802ETW	G	1	X							X		3-28-02	10:45	X		X								
	CUDXL32802ETW	G	2	X							X	X	3-28-02	10:43		X									

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 3-28-02	Received By:	
Bradley Blum	Time: 4:50		
Relinquished By:	Date: 03/28/2002	Received By: (Lab Staff)	
	Time: 4:52 P		

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Sample Condition		CHECKED BY:
Cool	Intact	(Initials)
☒ Yes ☐ No	☒ Yes ☐ No	

Phone Result:	☐ Yes	☐ No	Add'l Phone #:
Fax Result:	☐ Yes	☐ No	Add'l Fax #:
REMARKS:			

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CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 03/28/02
Reporting Date: 03/29/02
Project Owner: DUKE
Project Name: DUKE X LINE
Project Location: NOT GIVEN

Sampling Date: 03/27/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	TDS (mg/L)	Cl (mg/L)
ANALYSIS DATE:		03/28/02	03/28/02
H6630-1	WDXL32702NWMW	713	76
Quality Control		NR	1030
True Value QC		NR	1000
% Recovery		NR	103
Relative Percent Difference		NR	5.0

METHODS: EPA 600/4-79-02	160.1	4500-Cl B*

*Std. Methods

Chemist

3/29/02
Date

H6630A.XLS

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 03/28/02
Reporting Date: 03/29/02
Project Owner: DUKE
Project Name: DUKE X LINE
Project Location: NOT GIVEN

Sampling Date: 03/27/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		03/29/02	03/29/02	03/29/02	03/29/02
H6630-1	WDXL32702NWMW	0.102	1.24	0.204	2.31
Quality Control		0.108	0.105	0.108	0.310
True Value QC		0.100	0.100	0.100	0.300
% Recovery		108	105	108	103
Relative Percent Difference		0.5	0.6	0.6	<0.1

METHOD: EPA SW-846 8260

Chemist

3/29/02
Date

Cardinal Laboratories Inc.

2111 Beechwood, Abilene, TX 79603 — 101 East Marland, Hobbs, NM
915-673-7001 Fax 915-673-7020 — 505-393-2326 Fax 505-393-2476

Company Name	Environmental Plus
Project Manager	Pat McCasland
Address	2100 Ave O
City, State, Zip	Eunice N.M 88231
Phone#/Fax#	505-394-3481 505-394-2601
Project #/Owner	Duke
Project Name	Duke x Line
Project Location	
Sampler Name	Bradley Blair

Bill To

Analysis Request

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M	Chloride	TDS
H6630-1	(W) DX 32702 NWNWW	G	2	X							X	X	3-27	9:30	X			
	(W) DX 32702 NWNWW	G	1	X							X			9:32			X	X

Sampler Relinquished: Bradley Blair	Date: 3-27-02 Time: 9:30	Received By:	Fax Results To Pat McCasland 505-394-2601
Relinquished by:	Date: 3-28-02 Time: 2:20	Received By: (lab staff)	REMARKS:
Delivered by Sampler	Sample Cool & Intact: (Yes) No	Checked By:	

1

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 02/14/02
Reporting Date: 02/15/02
Project Owner: DUKE
Project Name: DUKE X-LINE
Project Location: NOT GIVEN

Sampling Date: 02/14/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: HM
Analyzed By: HM

LAB NUMBER	SAMPLE ID	TDS (mg/L)	Cl (mg/L)
ANALYSIS DATE:		02/14/02	02/14/02
H6505-1	WDXL21402EMW	561	52
Quality Control		NR	970
True Value QC		NR	1000
% Recovery		NR	97.0
Relative Percent Difference		NR	6.9

METHODS: EPA 600/4-79-02	160.1	4500-Cl⁻B*

*Std. Methods

Chemist

2/15/02
Date

H6505A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 02/14/02
Reporting Date: 02/15/02
Project Owner: DUKE
Project Name: DUKE X-LINE
Project Location: NOT GIVEN

Sampling Date: 02/14/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: HM
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		02/14/02	02/14/02	02/14/02	02/14/02
H6505-1	WDXL21402EMW	3.71	16.80	1.26	10.3
Quality Control		0.104	0.105	0.108	0.312
True Value QC		0.100	0.100	0.100	0.300
% Recovery		104	105	108	104
Relative Percent Difference		3.3	3.3	0.2	0.4

METHOD: EPA SW-846 8260

Burgess J. Cooke
Chemist

2/15/02
Date

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 E [illegible]hwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

Company Name:	Environmental Plus	BILL TO	
Project Manager:	Pat McCasland	P.O. #:	Same
Address:	2100 Ave O	Company:	
City:	Eunice State: N.M Zip: 88231	Attn:	
Phone #:	505-394-3481 Fax #: 505-394-2601	Address:	
Project #:	Project Owner: Duke	City:	
Project Name:	Duke X Line	State: Zip:	
Project Location:		Phone #:	
Sampler Name:	Bradley Blanc	Fax #:	

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	TDS	Chloride	BTEX 8021b
H4505-1	WDXL21402EMW	G	1	X							X		2-14-02	10:00	X	X	
-2	WDXL21402EMW	G	2	X							X		2-14-02	10:05			X

ANALYSIS REQUEST

Sampler Relinquished:	Date: 2-14-02 Time:	Received By:	
Bradley Blanc			
Relinquished By:	Date: 02-14-02 Time:	Received By: (Lab Staff)	
		Hope S. Moore	

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition		CHECKED BY: (Initials)
Cool	Intact	
☑ Yes	☐ Yes	
☐ No	☐ No	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/13/02
Reporting Date: 02/14/02
Project Owner: DUKE ENERGY
Project Name: X-LINE
Project Location: ETCHEVERRY RANCH

Sampling Date: 02/13/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		02/13/02	02/13/02	02/13/02	02/13/02
H6504-1	GW21302HOUSEW	<0.002	<0.002	<0.002	<0.006
H6504-2	GW21302FOREMANW	<0.002	<0.002	<0.002	<0.006
Quality Control		0.108	0.108	0.108	0.310
True Value QC		0.100	0.100	0.100	0.300
% Recovery		108	108	108	103
Relative Percent Difference		0.8	1.2	0.4	1.1

METHOD: EPA SW-846 8260

Chemist

2/14/02
Date

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Company Name:	Environmental Plus, Inc.	BILL TO	PO #:
Project Manager:	Pat McCasland	Company:	ERI
Address:	P.O. Box 1558	Attn:	
City:	Eunice State: NM Zip: 88231	Address:	
Phone #:		City:	
Fax #:		State:	Zip:
Project #:	Project Owner: Duke Energy	Phone #:	
Project Name:	X-Line	Fax #:	
Project Location:	Etcheverry Ranch		

ANALYSIS REQUEST: BTEX 8021

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX 8021
H6504-1	GW21302 Housewell	G		✓							✓		2-13-02	1700	X
-2	GW21302 Foreman W	G		✓							✓		5	1715	X

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Pat McCasland	Date: 2-13-02 Time: 1840	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
Relinquished By:	Date: 02/13/2002 Time: 6:30 P	Received By: (Lab Staff)	Fax Result: ☐ Yes ☐ No REMARKS: RUSH
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)	

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 02/19/02
Reporting Date: 02/22/02
Project Number: NOT GIVEN
Project Name: DUKE X LINE
Project Location: NOT GIVEN

Sampling Date: 02/15-02/18/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		02/20/02	02/20/02	02/20/02	02/20/02	02/20/02	02/20/02
H6523-1	SDXL21502SWBH-65	<10.0	90.7	<0.005	<0.005	<0.005	<0.015
H6523-2	SDXL21502SWBH-70	<10.0	29.3	<0.005	<0.005	<0.005	<0.015
H6523-3	SDXL21802NWBH-65	<10.0	17.3	<0.005	<0.005	<0.005	<0.015
H6523-4	SDXL21802NWBH-70	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
Quality Control		787	802	0.099	0.101	0.104	0.303
True Value QC		800	800	0.100	0.100	0.100	0.300
% Recovery		98.3	100	99.1	101	104	101
Relative Percent Difference		1.4	4.9	3.5	5.5	2.2	3.5

METHODS: TPH GRO & DRO - EPASW-846 8015 M; BTEX - SW-846 8260.

Burgess J. A. Cooke, Ph. D.

2/22/02
Date

H6523.XLS

2111 E hwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Company Name: Environmental Plus
Project Manager: Pat McCasland
Address: 2100 Ave O
City: Eunice State: N.M Zip: 88231
Phone #: 505-394-3481 Fax #: 505-394-2601
Project #: Project Owner: Duke
Project Name: Duke X Line
Project Location:
Sampler Name: Bradley Blevins

BILL TO
P.O. #: Same
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX 8260	TPH 8015M
H6523-1	SDXL21502SWBH-65	G	1			X					X		2-15-02	2:00	✓	✓
-2	SDXL21502SWRH-70	G	1			X					X		2-15-02	2:20	✓	✓
-3	SDXL21802NWBH-65	G	1			X					X		2-18-02	11:30	✓	✓
-4	SDXL21802NWBH-70	G	1			X					X		2-18-02	11:45	✓	✓

Sampler Relinquished: Pat McCasland
Date: 2-19-02
Time: 1300
Received By: Roger Boore

Relinquished By: Roger Boore
Date: 2-19-02
Time: 13:05
Received By: (Lab Staff) Amy Hill

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: ☐ Yes ☐ No; Intact: ☐ Yes ☐ No
CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☑ Yes ☐ No Add'l Fax #: ~~505-3~~
REMARKS:
CoC sequential

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 02/14/02
Reporting Date: 02/15/02
Project Owner: DUKE ENERGY
Project Name: DUKE X-LINE
Project Location: NOT GIVEN

Analysis Date: 02/14/02
Sampling Date: 02/13/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: HM
Analyzed By: BC

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)
H6506-1	SDXL21302WBH-35	382
H6506-2	SDXL21302WBH-55	251
H6506-3	SDXL21302WBH-65	346
Quality Control		242
True Value QC		240
% Recovery		101
Relative Percent Difference		1.5

METHOD: EPA 418.1

Chemist

2/15/02
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 02/14/02
Reporting Date: 02/15/02
Project Owner: DUKE ENERGY
Project Name: DUKE X-LINE
Project Location: NOT GIVEN

Sampling Date: 02/13/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: HM
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)
ANALYSIS DATE:		02/14/02	02/14/02
H6506-1	SDXL21302WBH-35	150	314
H6506-2	SDXL21302WBH-55	<10.0	102
H6506-3	SDXL21302WBH-65	116	215
Quality Control		770	749
True Value QC		800	800
% Recovery		97.1	93.6
Relative Percent Difference		4.9	10.6

METHOD: SW-846 8015 M

Chemist

2/15/02
Date

H6506A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 02/14/02
Reporting Date: 02/15/02
Project Owner: DUKE ENERGY
Project Name: DUKE X-LINE
Project Location: NOT GIVEN

Sampling Date: 02/13/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: HM
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		02/14/02	02/14/02	02/14/02	02/14/02
H6506-1	SDXL21302WBH-35	<0.005	0.150	0.508	7.34
H6506-2	SDXL21302WBH-55	<0.005	0.021	0.010	0.100
H6506-3	SDXL21302WBH-65	<0.005	0.240	0.298	3.32
Quality Control		0.104	0.105	0.108	0.312
True Value QC		0.100	0.100	0.100	0.300
% Recovery		104	105	108	104
Relative Percent Difference		3.3	3.3	0.2	0.4

METHOD: EPA SW-846 8260

Chemist

2/15/02
Date

Cardinal Laboratories Inc.

2111 Beechwood, Abilene, TX 79603
915-673-7001 Fax 915-673-7020

101 East Marland, Hobbs, NM 88240
505-393-2326 Fax 505-393-2476

Company Name	Environmental Plus INC
Project Manager	Pat McCasland
Address	BOX 1558
City, State, Zip	Eunice New Mexico 88231
Phone#/Fax#	505-394-3481 / 505-394-2601
Project #/Owner	Duke Energy
Project Name	Duke X-Line
Project Location	
Sampler Name	CODY MILLER

Bill To

<---------SAME

Analysis Request

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: CUDE OIL	MATRIX: SLUDGE	MATRIX: OTHER:	PRESERV.: ACID/BASE	PRESERV.: ICE/COOL	PRESERV.: OTHER	SAMPLING: DATE	SAMPLING: TIME	BTEX 8021B	TPH 8015M	TPH 418.1
H6506-1	SDXL21302WBH-30 35		1			x					x		2/13/02	10:30	X	X	X
-2	SDXL21302WBH-55		1			x					x		2/13/02	1:20	X	X	X
-3	SDXL21302WBH-65		1			x					x		2/13/02	2:10	X	X	X

Sampler Relinquished: Cody Miller	Date 2-14-02 Time	Received By:	Fax Results To Pat McCasland 505-394-2601 REMARKS:
Relinquished by:	Date Time	Received By: (lab staff) Hope S. Moreno	
Delivered by Sampler	Sample Cool & Intact (Yes) No	Checked By:	

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 02/13/02
Reporting Date: 02/15/02
Project Owner: DUKE ENERGY
Project Name: DUKE X-LINE
Project Location: NOT GIVEN

Sampling Date: 02/12/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)
ANALYSIS DATE:		02/13/02	02/13/02
H6502-1	SDXL21202EBH-25	<10.0	90.4
H6502-2	SDXL21202EBH-45	<10.0	<10.0
H6502-3	SDXL21202EBH-65	<10.0	<10.0
H6502-4	SDXL21202EBH-80	615	438
Quality Control		800	804
True Value QC		800	800
% Recovery		100	100
Relative Percent Difference		0.9	5.5

METHOD: SW-846 8015 M

Chemist

3/15/02
Date

H6502A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 02/13/02
Reporting Date: 02/15/02
Project Owner: DUKE ENERGY
Project Name: DUKE X-LINE
Project Location: NOT GIVEN

Analysis Date: 02/14/02
Sampling Date: 02/12/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)
H6502-1	SDXL21202EBH-25	382
H6502-2	SDXL21202EBH-45	251
H6502-3	SDXL21202EBH-65	346
H6502-4	SDXL21202EBH-80	1390
Quality Control		242
True Value QC		240
% Recovery		101
Relative Percent Difference		1.5

METHOD: EPA 418.1

Chemist

2/15/02
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 02/13/02
Reporting Date: 02/15/02
Project Owner: DUKE ENERGY
Project Name: DUKE X-LINE
Project Location: NOT GIVEN

Sampling Date: 02/12/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		02/13/02	02/13/02	02/13/02	02/13/02
H6502-1	SDXL21202EBH-25	<0.005	<0.005	0.009	0.279
H6502-2	SDXL21202EBH-45	<0.005	<0.005	<0.005	<0.015
H6502-3	SDXL21202EBH-65	<0.005	<0.005	<0.005	<0.015
H6502-4	SDXL21202EBH-80	0.013	2.48	2.50	23.4
Quality Control		0.108	0.108	0.108	0.310
True Value QC		0.100	0.100	0.100	0.300
% Recovery		108	108	108	103
Relative Percent Difference		0.8	1.2	0.4	1.1

METHOD: EPA SW-846 8260

Chemist

2/15/02
Date

Cardinal Laboratories Inc.

2111 Beechwood, Abilene, TX 79603
915-673-7001 Fax 915-673-7020

101 East Marland, Hobbs, NM 88240
505-393-2326 Fax 505-393-2476

Company Name	Environmental Plus INC
Project Manager	Pat McCasland
Address	BOX 1558
City, State, Zip	Eunice New Mexico 88231
Phone#/Fax#	505-394-3481 / 505-394-2601
Project #/Owner	Duke Energy
Project Name	Duke X-Line
Project Location	
Sampler Name	CODY MILLER

Bill To

<--------SAME

Analysis Request

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: CUDE OIL	MATRIX: SLUDGE	MATRIX: OTHER:	PRESERV.: ACID/BASE	PRESERV.: ICE/COOL	PRESERV.: OTHER	SAMPLING: DATE	SAMPLING: TIME	BTEX 8021B	TPH 8015M	TPH 418.1
H16502-1	SDXL21202EBH-25		1			x					x		2/12/02	9:30	X	X	X
-2	SDXL21202EBH-45		1			x					x		2/12/02	10:35	X	X	X
-3	SDXL21202EBH-65		1			x					x		2/12/02	11:40	X	X	X
-4	SDXL21202EBH-80		1			x					x		2/12/02	12:25	X	X	X

Sampler Relinquished: Cody Miller Date 2-13-02 Time

Relinquished by: Date 2-13-02 Time 3:35

Received By:

Received By: (lab staff) Amy Hill

Delivered by Sampler

Sample Cool & Intact (Yes) No

Checked By:

Fax Results To Pat McCasland 505-394-2601

REMARKS:

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/08/02
Reporting Date: 02/09/02
Project Owner: DUKE ENERGY
Project Name: X-LINE
Project Location: NOT GIVEN

Sampling Date: 02/08/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)
ANALYSIS DATE:		02/08/02	02/08/02
H6493-1	SDXL2802MBH 65'	4960	2760
H6493-2	SDXL2802NBH 50'	<50	<50
Quality Control		800	804
True Value QC		800	800
% Recovery		100	100
Relative Percent Difference		0.9	5.5

METHOD: SW-846 8015 M

Chemist

2/9/02
Date

H6493A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/08/02
Reporting Date: 02/09/02
Project Owner: DUKE ENERGY
Project Name: X-LINE
Project Location: NOT GIVEN

Analysis Date: 02/08/02
Sampling Date: 02/08/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)
H6493-1	SDXL2802MBH 65'	9830
H6493-2	SDXL2802NBH 50'	63.2
Quality Control		242
True Value QC		240
% Recovery		101
Relative Percent Difference		1.5

METHOD: EPA 418.1

Chemist

2/9/02
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/08/02
Reporting Date: 02/09/02
Project Owner: DUKE ENERGY
Project Name: X-LINE
Project Location: NOT GIVEN

Sampling Date: 02/08/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		02/08/02	02/08/02	02/08/02	02/08/02
H6493-1	SDXL2802MBH 65'	0.637	67.4	26.1	227
H6493-2	SDXL2802NBH 50'	<0.005	<0.005	<0.005	<0.015
Quality Control		0.108	0.106	0.108	0.310
True Value QC		0.100	0.100	0.100	0.300
% Recovery		108	106	108	103
Relative Percent Difference		0.4	2.0	2.8	1.4

METHOD: EPA SW-846 8260

Chemist

2/9/02
Date

Cardinal Laboratories Inc.

111 Beechwood, Abilene, TX 79603
915-673-7001 Fax 915-673-7020

101 East Marland, Hobbs, NM 88240
505-393-2326 Fax 505-393-2476

Company Name	ENVIRONMENTAL PLUS, INC.
Project Manager	PAT MCCASLAND
Address	2100 AVE O
City, State, Zip	EUNICE
Phone#/Fax#	
Project #/Owner	DUKE ENERGY
Project Name	X-LINE
Project Location	
Sampler Name	B. BLEVINS

Bill To

Analysis Request

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: CUDE OIL	MATRIX: SLUDGE	MATRIX: OTHER:	PRESERV.: ACID/BASE	PRESERV.: ICE/COOL	PRESERV.: OTHER	SAMPLING: DATE	SAMPLING: TIME	BTEX 8021B	TPH ~~8015M~~ 418.1	TPH 8015M
H6493-1	SDXLZ802MBH-65'	G	1			✓					✓		2-8	9:25	X	X	X
-2	SDXLZ802NBH 50'	G	1			✓					✓		2-8	1:30	X	X	X

Sampler Relinquished: B Blevins	Date 2-8 Time 4:30	Received By:	Fax Results To Pat McCasland 505-394-2601
Relinquished by:	Date Time	Received By: (lab staff)	REMARKS: RUSH
Delivered by Sampler	Sample Cool & Intact (Yes) No	Checked By:	

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/01/02
Reporting Date: 02/07/02
Project Owner: DUKE
Project Name: X-LINE
Project Location: SEC7 T15S R34E

Sampling Date: 02/01/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

SUPPLEMENTAL REPORT

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)
ANALYSIS DATE:		02/05/02	02/05/02
H6481-1	SDXL020102CBH37	5400	6720
Quality Control		801	742
True Value QC		800	800
% Recovery		100	92.8
Relative Percent Difference		1.8	7.7

METHOD: SW-846 8015 M

Chemist

2/7/02
Date

H6481C.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/01/02
Reporting Date: 02/04/02
Project Owner: DUKE
Project Name: X-LINE
Project Location: SEC7 T15S R34E

Sampling Date: 02/01/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	TPH* (mg/Kg)	Cl** (mg/Kg)
ANALYSIS DATE:		02/01/02	02/01/02
H6481-1	SDXL020102CBH37	10100	80
Quality Control		239	1039
True Value QC		240	1000
% Recovery		99.4	104
Relative Percent Difference		4.6	1.0

METHODS: TPH-EPA 600/4-79-020 418.1; Cl-Std. Methods 4500-Cl-B
*Requested 8015 M not performed at this time due to instrument breakdown.
**Analyses performed on 1:4 w:v aqueous extracts.

Chemist

2/4/02
Date

H6481A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/01/02
Reporting Date: 02/04/02
Project Owner: DUKE
Project Name: X-LINE
Project Location: SEC7 T15S R34E

Sampling Date: 02/01/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		02/01/02	02/01/02	02/01/02	02/01/02
H6481-1	SDXL020102CBH37	2.87	62.9	21.4	176
Quality Control		0.106	0.104	0.106	0.300
True Value QC		0.100	0.100	0.100	0.300
% Recovery		106	104	106	100
Relative Percent Difference		4.8	2.9	0.5	0.2

METHOD: EPA SW-846 8260

Chemist

Date 2/4/02

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ____ of ____

Company Name:	EPI	BILL TO	PO #:
Project Manager:	Pat McCasland	Company:	
Address:	P.O. Box 1558	Attn:	
City:	Eunice State: NM Zip: 88231	Address:	
Phone #:		City:	
Fax #:		State:	Zip:
Project #:	Project Owner: DUKE	Phone #:	
Project Name:	X-LINE	Fax #:	
Project Location:	SEC 7, T 15S, R 34E		

ANALYSIS REQUEST: BTEX, CL, 8015M (418.1)

FOR LAB USE ONLY				MATRIX						PRES.			SAMPLING	
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID:	ICE / COOL	OTHER :	DATE	TIME
H6481-1	~~SDXL020102<BH37~~ BC SDXL020102<BH37					X							2/1/02	

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collection, including attorney's fee.

Sampler Relinquished: Eddie J Harper	Date:	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time:		Fax Result: ☑ Yes ☐ No
Relinquished By:	Date: 2/1/02	Received By: (Lab Staff)	REMARKS: 418.1 will be run for pleelim. report upon unit. for 8015M is repaired BC
	Time: 3:30PM		
Delivered By: (Circle One)		Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/01/02
Reporting Date: 02/04/02
Project Number: NOT GIVEN
Project Name: X-LINE
Project Location: SEC7 T17S R32E
South -29'

Sampling Date: 01/31/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	TPH* (mg/Kg)	Cl** (mg/Kg)
ANALYSIS DATE:		02/01/02	02/01/02
H6479-1	SDXL013102SBH	448	64
Quality Control		239	1039
True Value QC		240	1000
% Recovery		99.4	104
Relative Percent Difference		4.6	1.0

METHODS: TPH-EPA 600/4-79-020 418.1; Cl-Std. Methods 4500-Cl⁻B
*Requested 8015 M not performed at this time due to instrument breakdown.
**Analyses performed on 1:4 w:v aqueous extracts.

Chemist

2/4/02
Date

H6479A.XLS

CARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/01/02
Reporting Date: 02/04/02
Project Number: NOT GIVEN
Project Name: X-LINE
Project Location: SEC7 T17S R32E

Sampling Date: 01/31/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		02/01/02	02/01/02	02/01/02	02/01/02
H6479-1	SDXL013102SBH	<0.005	0.107	0.101	1.640
Quality Control		0.106	0.104	0.106	0.300
True Value QC		0.100	0.100	0.100	0.300
% Recovery		106	104	106	100
Relative Percent Difference		4.8	2.9	0.5	0.2

METHOD: EPA SW-846 8260

Burgess J. Cooke
Chemist

2/4/02
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 02/01/02
Reporting Date: 02/07/02
Project Number: NOT GIVEN
Project Name: X-LINE
Project Location: SEC7 T17S R32E

Sampling Date: 01/31/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SUPPLEMENTAL REPORT

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)
ANALYSIS DATE:		02/05/02	02/05/02
H6479-1	SDXL013102SBH	<50	145
Quality Control		801	742
True Value QC		800	800
% Recovery		100	92.8
Relative Percent Difference		1.8	7.7

METHOD: SW-846 8015 M

Chemist

2/7/02
Date

H6479C.XLS

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020

101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Company Name:	~~Duke Energy~~ EPI	**BILL TO**	**PO #:**
Project Manager:	Paul McClasland		
Address:	P.O. Box 1358	**Company:**	
City:	Eunice **State:** NM **Zip:** 88231	**Attn:**	
Phone #:		**Address:**	
Fax #:		**City:**	
Project #:	**Project Owner:** Duke	**State:**	**Zip:**
Project Name:	X-Line	**Phone #:**	
Project Location:	Sec 7 T17S R32E	**Fax #:**	

FOR LAB USE ONLY				MATRIX						PRES.			SAMPLING		ANALYSIS REQUEST											
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID:	ICE / COOL	OTHER :	DATE	TIME	BTEX	8015	Cl-									
H6479-1	SDXL013102SB	H	1			✓							1-31-02	1:45	✓	✓	✓									

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Eddie Harper	**Date:**	**Received By:**	**Phone Result** ☐ Yes ☐ No **Additional Fax #:**
	Time:		**Fax Result:** ☐ Yes ☐ No
Relinquished By:	**Date:** 1-31-02	**Received By: (Lab Staff)**	**REMARKS:**
	Time: 2:30		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		**Sample Condition** Cool: ☐ Yes ☐ No Intact: ☐ Yes ☐ No	**CHECKED BY: (Initials)**

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.