Leaking Petroleum Storage Tanks
Minnesota Pollution Control Agency
http://www.pca.state.mn.us/programs/lust_p.html

Investigation Report Form

Fact Sheet #3.24

Complete this form to document remedial investigation (RI) activities, including Limited Site Investigations (LSIs) and full RIs. Do not revise or delete any text or questions from this report form. Include any additional information that is important for making a site cleanup decision. If only a LSI is necessary, you may skip Section 6 and Section 7 of this report form.

Refer to Minnesota Pollution Control Agency (MPCA) fact sheet 3.1 *Leaking Underground Storage Tank Program* for the overall RI objectives, and to other MPCA fact sheets for details on investigation methods. When a tank has been excavated, refer to fact sheets 3.6 *Excavation of Petroleum Contaminated Soil During Tank Removal* and 3.7 *Excavation Report Worksheet for Petroleum Release Sites* for reporting requirements. Document the occurrence of free product using fact sheet 3.3 *Free Product: Evaluation and Recover,* and fact sheet 3.4 *Free Product Recovery Report Worksheet.*

MPCA Site ID: Leak: 00014698 Date: August 19, 2003

Responsible Party: North American State Bank R.P. phone #: (320) 254-8271

Consultant: Coteau Environmental Consultant phone #: (320) 846-4668

Facility Name: Former K-C Kwik Stop

Facility Address: 230 1st Street City: Brooten, Minnesota

County: Stearns Zip Code: 56316

Site location: The required coordinate scheme for reporting site location is Universal Transverse Mercator (UTM), Extended Zone 15, 1983 North American Datum (NAD83). Refer to **http://www.ot.state.mn.us/ot_files/handbook/standard/std17-1.html** for Minnesota spatial data standards, or **http://mac.usgs.gov/mac/isb/pubs/factsheets/fs15799.html** for more information about UTM Coordinates.

X coordinate (Easting) 15 333791E meters
Y coordinate (Northing) 5040564N meters

What feature does the coordinate represent? (i.e. center of parcel, approximate center of source area, etc. Please describe)

The coordinates represent the approximate center of the source area.

What method was used to determine the coordinate? (i.e. GPS receiver, map interpolation, address matching, etc. Please describe)

The coordinates were determined from a digital topographic map at the website www.topozone.com.

If a paper map, digital map, aerial photo or digital orthophotoquad was used to find the site location, please provide the scale of the map or photo (i.e. 1:24,000, etc.)

The scale of the digital map is 1:25,000.

Section 1: Emergency and High Priority Sites

1. Is an existing drinking water well impacted or likely to be impacted within a two-year travel time?	*No*
2. Are there existing vapor impacts?	*No*
3. Is there an existing surface water impact as indicated by 1) a product sheen on the surface water or 2) a product sheen or volatile organic compounds in the part per million (ppm) range in ground water in a well located close to the surface water.	*No*
4. Has the release occurred in the last 30 days?	*No*
5. Has free product been detected at the site? **If *YES***, attach fact sheet 3.4 *Free Product Recovery Report Worksheet.*	*No*
6. Is sand or gravel aquifer impacted which is tapped by water wells within or potentially within 500 feet from the release source **or** does impacted soil overlie a geologically sensitive area? **If *YES***, explain:	*Yes*

If you answered *YES* to any of questions 1 through 6 above describe below the actions taken to date to reduce or eliminate the risk posed by the release.

Five (5) monitor wells were installed at the site on August 7, 2002. Ground water monitoring was conducted at the site. An additional monitor well was completed at the site on February 4, 2003. A vapor survey was conducted in the vicinity of the site on August 8, 2002. Residential basements and utility manholes were screened for organic vapors during the survey. No elevated organic vapor concentrations were identified during the vapor survey.

Section 2: Site and Release Information

2.1 Attach Table 1 - Tank Information. Describe the status of the other components of the tank system(s), (i.e., piping and dispensers).

The pump dispensers formerly located at the site were removed on April 17, 2002. The pump dispensers were removed prior to Coteau personnel arriving at the site. Reportedly, the pump dispensers were in good condition at the time of removal.

2.2a Describe the land use and pertinent geographic features within 1,000 feet of the site.

Residential and commercial properties are located within 1,000 feet of the site.

2.2b List other potential leak sources within 500 feet of the site.

None

2.3 Identify and describe the source or suspected source(s) of the release.

The suspected source(s) of the release is/are the gasoline UST (s) formerly located at the site.

2.4 What was the volume of the release? (if known): Unknown gallons

2.5 When did the release occur? (if known):Unknown

Section 3: Excavated Soil Information

3.1 Include the Fact Sheet 3.7 *Excavation Report Worksheet* in Appendix A

3.2 Was soil excavated for off-site treatment? *No*

Date excavated: N/A

Volume removed: cubic yards

3.3 Indicate soil treatment type:

- ☐ land treatment
- ☐ thermal treatment
- ☐ composting/biopiling
- ☐ other ( )

Name and location of treatment facility:

N/A

Section 4: Extent and Magnitude of Soil Contamination

4.1 Were soil borings conducted in or immediately adjacent to all likely sources including: *YES*

dispensers,	*yes*
underground storage tank basins,	*yes*
above ground storage tank areas,	*not present*
piping,	*yes*
remote fill pipes,	*not present*
and known spill areas	*not present*

4.2 To adequately define the vertical extent of contamination, soil borings should be completed at least five feet below the water table or ten feet below the deepest measurable (field screening and visual observation) contamination, whichever is deeper. Were all soil borings completed to the required depth? *NO*

4.3 To adequately evaluate site stratigraphy complete at least one boring to 20 feet below the water table, or to 20 feet below the deepest site contamination, whichever is deeper. If a confining layer is present, drill the boring in an uncontaminated area. Was this done? *NO*

If you answered *NO* to any of the three previous questions, explain why the borings were not conducted in the required locations or to the required depths (see fact sheet #3.19, *Soil and Ground Water Investigations Performed During Remedial Investigations* regarding exceptions and MPCA approval for depth of drilling):

Soil borings were not completed at the locations of the former pump dispensers because soil samples were collected from beneath the locations of the former dispensers during UST system excavation activities at the site on April 17, 2002. Based on field screening and laboratory analysis, no petroleum impacts were identified at the former locations of the pump dispensers.

Soil boring B-1 was completed to a depth of 20 feet below the water table, but could not be completed to a depth of 20 feet below the deepest measurable contamination due to refusal. In addition, borings B-5, B-6, B-7 and B-8 could not be completed to a depth of five (5) feet below the deepest measurable contamination because of refusal.

4.4 Indicate the drilling method:

- X hollow-stem auger
- ☐ sonic drilling
- X push probes
- ☐ other .

Note: MPCA staff hydrologist approval is required before use of flight augers

4.5 Discuss soil borings drilled and provide rationale for their locations. Attach boring logs in Appendix D.

Soil borings completed at the site were located to determine the horizontal extent of soil impacts. Placement of the borings was conducted in accordance with MPCA guidelines.

4.6 Attach Table 2 - Results of Soil Headspace Screening, In Appendix C, discuss soil headspace screening method and describe any deviation from recommended and/or required methods and procedures.

4.7 Attach Table 3 - Analytical Results of Soil Samples. Provide analytical results in Appendix B. In Appendix C, discuss soil sampling and analytical methods used and describe any deviation from recommended and/or required methods and procedures

4.8 Describe the vertical and horizontal extent and magnitude of soil contamination. Provide a plan-view map and two cross-sections that illustrate both soil head space and laboratory analytical results. See Section 13.

The approximate horizontal extent of soil impacts is shown on Figures 4 and 5. The maximum benzene and MTBE concentrations (29.000 and 150.000 ppm, respectively) were identified in the soil sample collected from boring B-4 (9-11 feet bg). The maximum TPH as GRO concentration (9,100 ppm) was identified in the soil sample collected from boring B-3 (9-12 feet bg). Geologic cross-sections of the soil borings are shown on Figures 11 and 12.

4.9 Attach Table 4 - Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived). Discuss the possible sources of these compounds.

Methyl tertiary butyl ether (MTBE) was identified by laboratory analysis in soil samples collected from borings B-1 (9-12 feet bg), B-3 (9-12 feet bg), B-4 (9-11 feet bg) and B-5 (17-19 feet bg) at concentrations of 94.000, 67.000, 150.000 and 0,300 parts per million (ppm), respectively. The likely source(s) of this compound is gasoline released from UST's formerly located at the site.

4.10 Is contaminated soil in contact with ground water? *Yes*

If *YES* or if ground water contamination appears likely, then complete Section 5.

If *NO* (contaminated soil is not in contact with ground water), what is the distance separating the deepest contamination from the surface of the water table? Was this distance measured during site activities, referenced from geologic information, or estimated based on feet

professional opinion during a site visit?

4.10 Describe observations of any evidence of a fluctuating water table and a seasonal high water table (e.g., mottling). Also, from other sources of information describe the range of natural water table fluctuations in the area.

No mottling was observed during soil boring activities on June 13, August 6 and 7, 2002 and February 4, 2003. Based on information from water well logs obtained from the Minnesota Geological Survey (MGS), static water levels in four (4) water wells located approximately 300 feet to one (1) mile from the former KC Kwik Stop site ranged from five (5) to 22 feet bg at the time of construction. Ground water levels measured in the monitor wells completed at the site averaged 9.04, 9.48, 8.90 and 10.00 feet bg during monitoring events conducted on August 12 and November 6, 2002 and February 27 and May 1, 2003, respectively. Based on this information, the water table in the vicinity of the site appears to be near a seasonal high level.

4.12 In your judgment, is there a sufficient distance separating the petroleum contaminated soil (or an impacted non- aquifer) from the underlying aquifer to prevent petroleum contamination of the aquifer? Please explain in detail. In your explanation, consider the data and information of this section as well as the nature of the petroleum release (i.e., volume, when it occurred, petroleum product). *No*

If *YES,* a ground water contamination assessment is not necessary as part of the LSI.
If *NO*, a ground water contamination assessment is necessary. Complete Section 5.

Significant soil impacts were identified by laboratory analysis in borings B-1 (9-12 feet), B-3 (9-12 and 15-18 feet) and B-4 (9-11 feet). As previously mentioned, the average depth to water was measured at 9.04, 9.48, 8.90 and 10.00 feet bg on August 12 and November 6, 2002 and February 27 and May 1, 2003, respectively. Therefore, soil impacts are below the water table at the site. In addition, based on water supply well logs obtained from the MGS, it appears that nearby water wells utilize the impacted aquifer. Ground water impacts were identified in monitor wells MW-4 and MW-5 during the August 12, 2002 monitoring event and in monitor wells MW-3, MW-4 and MW-5 during the November 6, 2002 and February 27 and May 1, 2003 monitoring events.

Section 5: Aquifer Characteristics/Ground Water Contamination Assessment

Complete Section 5 if groundwater has been contaminated or may become contaminated. Aquifer determination is made during the LSI. It is based upon the stratigraphy and a hydraulic conductivity measurement calculated from grain size distribution analysis. The site stratigraphy gives the context within which the hydraulic conductivity measurement can be interpreted. Please refer to Fact Sheet 3.19, *Soil and Ground Water Investigations Performed During Remedial Investigations* for methods and requirements.

5.1 Provide an average hydraulic conductivity value (K) measured:

K =638.74 ft/day

Indicate the method of measurement (i.e., Hazen, Masch and Denny, Kozeny-Carmen, etc.):
Hydraulic conductivity measured by Hazen, Masch and Denny approximation.
Grain-size distribution approximations by sieve analysis method(s).

Indicate the locations and depths of soil samples submitted for grain size analyses. Provide the results of grain size analyses and other information used for the determination of K-values in Appendix F.

Soil samples were collected for grain size analyses from soil borings B-1 (16-18 feet bg), B-2 (15-17 feet bg) and B-3 (21-23 feet bg).

5.2 Calculate a range for aquifer transmissivity (T) using the equation T = Kb, where b is the thickness of the aquifer:

T_{High} = 26,387 ft^2/day b = 19 feet
T_{Low} = 4,527 ft^2/day

Determine the aquifer thickness (b) from geologic logs of soil borings, water well logs, and available published information. Attach water well logs in Appendix D. If the transmissivity of a contaminated hydrogeologic unit is greater than 50 ft^2/day, it is considered an aquifer (for the purpose of the LUST program), and monitoring wells will be necessary.

5.3 Discuss in detail the site geology and stratigraphy, including a discussion of local and regional hydrogeology, using soil boring data and cross sections, geologic logs of near-by water wells, and available published information.

Based on water supply well logs for water wells located within one (1) mile of the site, obtained from the Minnesota Geological Survey (MGS), sand and gravel are present from approximately one (1) to three (3) feet bg to a depth ranging from 25 to 45 feet bg. Below these depths, interbedded layers of clay and sand are present to a depth of approximately 140 feet bg.

Soil sediments encountered during soil boring activities consisted of approximately two (2) to four (4) feet of fill and/or topsoil, underlain by approximately two (2) to three (3) feet of alluvium, underlain by fine to coarse sand and fine gravel outwash to a depth of approximately 28 feet bg. Clay till was encountered in boring B-1 at a depth of approximately 28 feet bg.

5.4 Attach Table 5- Water Level Measurements and Depths of Water Samples Collected from Borings. Indicate the method used to measure the water levels in borings, and the depth water samples were collected from borings. Allow water levels in borings to equilibrate to static conditions, and the adjust the effective screened intervals in borings to intercept the static water table prior to water sample collection. Discuss groundwater flow direction.

Water levels in the soil borings were allowed to equilibrate to static conditions prior to measurement. Based on the results of ground water monitoring conducted on August 12 and November 6, 2002, the ground water flow direction was to the east-northeast. Based on ground water monitoring conducted at the site on February 27 and May 1, 2003, ground water flow was to the east-southeast in the vicinity of the site. Additional ground water monitoring will be required to determine the predominant flow direction at the site.

5.5 Attach Table 6 - Analytical Results of Water Samples Collected from Borings. Summarize the analytical results of groundwater samples collected as part of an LSI. Discuss the extent and magnitude of groundwater contamination. Also provide a discussion on QA/QC, including information on the samples collected and laboratory analyses performed.

Ground water samples were collected from borings B-1, B-2, B-3 and B-4 on June 13, 2002. Ground water was not encountered in boring B-5 during drilling on August 6, 2002 and therefore, a water sample was not collected from boring B-5. Benzene, toluene and ethyl benzene were identified in the ground water sample collected from boring B-1 at concentrations of 1,254.0, 4,798.0 and 763.0 parts per billion (ppb), respectively. Benzene, toluene and ethyl benzene were also identified in the ground water sample collected from boring B-3 at concentrations of 101.0, 4,696.0 and 1,259.0 ppb, respectively. In addition, benzene, toluene, ethyl benzene and xylenes (BTEX) were identified in ground water collected from boring B-4 at concentrations of 209.0, 9,054.0, 2,686.0 and 16, 028.0 ppb, respectively. These concentrations are above the Health Risk Limits (HRL's) for these constituents. TPH as GRO was also identified by laboratory analysis in ground water

collected from borings B-1, B-2, B-3 and B-4 at concentrations of 44,993.0, 4,211.0, 350,157.0 and 338,583.0 ppb, respectively. The horizontal extent of ground water impacts is illustrated on Figures 6A, 6B, 7A and 7B. Ground water samples collected from the soil borings were laboratory analyzed for volatile organic compounds (VOC's) and TPH as GRO.

5.6 Attach Table 7 - Other Contaminants Detected in Water Samples Collected from Borings (Petroleum or Non-petroleum Derived). Discuss the possible sources of these contaminants and provide a discussion of QA/QC information.

Laboratory analysis identified naphthalene, above the HRL of 300 ppb, in ground water collected from borings B-1, B-3 and B-4. 1,2,4-Trimethylbenzene was identified in ground water collected from borings B-1, B-2, B-3 and B-4 at concentrations of 725.0, 336.0, 2,338.0 and 6,246.0 ppb, respectively. Laboratory analysis identified 1,3,5-Trimethylbenzene in ground water from borings B-2, B-3 and B-4 at concentrations of 100.0, 1,008.0 and 1,960.0 ppb, respectively. Isopropylbenzene was identified in ground water collected from borings B-2, B-3 and B-4 at concentrations of 7.0, 144.0 and 227.0 ppb, respectively. In addition, n-Propylbenzene was identified in ground water from borings B-2, B-3 and B-4 at concentrations of 11.0, 488.0 and 915.0 ppb, respectively. The likely source of these compounds is the former gasoline stored in the UST's at the site.

5.7 Laboratory certification number: Northeast Technical Services (027-137-157)
Summit Environmental Technologies (039-999-385)

Additional Ground Water Investigation

Complete **Section 6** only if: 1*) an aquifer has been impacted at or above Minnesota Department of Health HRLs, 2) an aquifer has been impacted below the HRLs, but the levels are likely to reach the HRLs, or 3) there is an insufficient distance separating the petroleum contaminated soil (or an impacted non- aquifer) from the underlying aquifer.* Complete **Section 7** only if remediation is anticipated. Regardless of whether you are submitting a *LSI* or a *full RI*, all sections following Section 7 must be completed.

Section 6. Extent and Magnitude of Ground Water Contamination

6.1 Discuss drilling and installation of wells, including the rationale for their locations. Attach boring logs in Appendix D.

Monitor wells MW-1, MW-2, MW-3, MW-4 and MW-5 were installed on August 7, 2002. Monitor well MW-6 was completed on February 4, 2003. The monitor wells were completed to a depth of 19 feet bg, utilizing 15-foot PVC screens. Monitor wells MW-1, MW-5 and MW-6 were completed as flush-grade wells, while MW-2, MW-3 and MW-4 were completed as above-grade wells.

6.2 Attach Table 8 - Monitoring Well Completion Information.

6.3 Attach Table 9 - Summary of Water Levels Measured in Wells.

6.4 Attach Table 10 - Analytical Results of Water Samples Collected from Wells. Indicate here whether samples were purged or unpurged (see fact sheet 3.23). If purged, indicate purging method.

Ground water samples collected from the monitor wells were purged by collecting five (5) well volumes using a dedicated polyethylene bailer, then allowing the water table to stabilize before samples were collected (Appendix C).

6.5 Attach Table 11 - Other Contaminants Detected in Water Samples Collected from Wells (Petroleum or Non-Petroleum Derived). Indicate here whether samples were purged or unpurged (see fact sheet 3.23). If purged, indicate purging method.

Ground water samples collected from the monitor wells were purged by collecting five (5) well volumes using a dedicated polyethylene bailer, then allowing the water table to stabilize before samples were collected (Appendix C).

6.6 Describe the extent and magnitude of the ground water contamination. Discuss the presence of non-petroleum compounds, if detected, and identify possible sources of these compounds. Also provide a discussion on QA/QC, including information on the samples collected and laboratory analyses performed.

Monitor well locations are shown on Figure 2. Ground water sampling of the monitor wells was conducted on August 12 and November 6, 2002. During the August 12, 2002 monitoring event, benzene and toluene were identified in ground water collected from monitor well MW-5 at concentrations of 503.0 and 1,187.0 ppb, respectively. These concentrations are above the HRL's for these constituents. In addition, TPH as GRO was identified in ground water from MW-5 at a concentration of 13,919.0 ppb on August 12, 2002. Acetone was also identified in ground water from MW-5 at a concentration of 910.0 ppb during the August 12, 2002 monitoring event. The possible source of acetone identified in ground water collected from MW-1 may have been a spill of paint or antifreeze at the site in the past. It is also possible that propane, a naturally-occurring organic chemical found in soil, may have been converted to acetone by hydrolysis of the beta carbon of straight-chain alkanes by the enzyme monooxygenase during the beta-oxidation metabolic pathway.

During the November 6, 2002 monitoring event, benzene, toluene and ethyl benzene were identified in ground water collected from monitor well MW-3 at concentrations of 728.0, 3,111.0 and 1,011.0 ppb, respectively. In addition, benzene and toluene were identified in ground water from monitor well MW-5 at concentrations of 1,167.0 and 5,320.0 ppb, respectively. These concentrations are above the HRL's for these constituents. TPH as GRO was also identified in ground water collected from monitor wells MW-3 and MW-5 at concentrations of 18,550.0 and 56,660.0 ppb, respectively, on November 6, 2002. In addition, laboratory analysis identified naphthalene at a concentration of 917.0 ppb in ground water from monitor well MW-3 on November 6, 2002.

During the February 27, 2003 monitoring event, benzene, toluene, ethyl benzene xylenes and TPH as GRO were identified in the ground water sample collected from monitor well MW-3 at concentrations of 349.0, 307.0, 655.0, 1,790.0 and 7,101.0 ppb, respectively. The benzene concentration is above the HRL for benzene. Benzene and TPH as GRO were identified in ground water collected from monitor well MW-4 at concentrations of 9.4 and 206.0 ppb, respectively. Benzene, toluene, ethyl benzene, xylenes and TPH as GRO were identified in ground water collected from monitor well MW-5 at concentrations of 4,888.0, 13,065.0, 1,165.0, 9,325.0 and 54,146.0 ppb, respectively. These concentrations are above the HRL's for benzene, toluene and ethyl benzene.

Ground water monitoring was again conducted at the site on May 1, 2003. Benzene, toluene, ethyl benzene, xylenes and TPH as GRO were identified in the ground water sample collected from monitor well MW-3 at concentrations of 201.0, 424.0, 493.0, 1,522.0 and 5,827.0 ppb, respectively. In addition, benzene was identified in ground water from monitor well MW-4 at a concentration of 5.0 ppb. Benzene, toluene, ethyl benzene xylenes and TPH as GRO were identified in ground water from MW-5 at concentrations of 2,566.0, 12,436.0,

1,089.0, 5,809.0 and 34,537.0 ppb, respectively. These concentrations are above the HRL's for benzene, toluene and ethyl benzene.

A duplicate ground water sample was collected from one (1) monitor well during each monitoring event, and was laboratory analyzed for BTEX and TPH as GRO. In addition, a trip blank was laboratory analyzed for BTEX. No field or laboratory interferences were identified in the trip blanks. Benzene was identified in the field duplicate sample collected during the February 27, 2003 sampling event at a concentration of 9.0 ppb.

6.7 Is there a clean or nearly clean (below HRLs) down-gradient monitoring well located along the longitudinal axis of the contaminant plume? (approximately 20 degrees plus or minus the axis) *Yes*

6.8 Is there a worst case well completed through the source area(s) of the release? *Yes*

If you have answered *NO* to any of the above two questions, please explain why a well was not completed in the required location.

6.9 Provide an estimate of the longitudinal length of the dissolved contaminant plume: 120 feet

6.10 Calculate groundwater flow velocity (based on Darcy's Law) using the average K-value, average horizontal hydraulic gradient, and effective porosity. Provide documentation in Appendix F.

Hydraulic Conductivity (K) = 0.129 cm/sec Method: Grain-size analysis
Porosity (n) = 0.35 method/reference: Freeze and Cherry, Groundwater, 1979, p. 37).
Average horizontal gradient (dh/dl) = 0.0027
Calculated GW velocity (v) = 9.95×10^{-4} cm/s = 2.82 ft/day

6.11 Using the calculated groundwater flow velocity (above), is there a receptor within a five-year travel time? *Yes*

If *YES*, provide the unique well number and identify the location of the receptor(s).

A domestic water supply well (Unique # 00458780) is located approximately 320 feet southeast of the release source area. In addition, municipal water supply wells #00102020 and #00215137 are located approximately 2,592 feet southeast and 1,120 feet northeast of the release source area, respectively. Based on the distances of these water wells from the release source area and natural attenuation of the petroleum impacts over time, the risk of impacts to these water wells is minimal. A six (6)-inch diameter PVC municipal water line

is located beneath Western Avenue, approximately 40 feet east of the release source area. This water line is at a reported depth of seven (7) feet bg. A one (1)-inch diameter copper water service line extends onto the former K-C Kwik Stop property from the above-mentioned municipal water line, also at a reported depth of approximately seven (7) feet bg. In addition, a 12-inch diameter concrete storm sewer line is also located beneath Western Avenue, approximately 25 feet east of the release source area. This storm sewer line is at a reported depth of approximately six (6) feet bg. Eight (8)-inch diameter sanitary sewer lines are reportedly located in the alleys approximately 130 feet west and 190 feet east of the release source area. These sanitary sewer lines are at a reported depth of approximately eight (8) feet bg.

6.12 Were any deep monitoring wells completed at the site? *No*

If *YES*, list them and indicate their depths:

Contact the MPCA project hydrologist before installing a deep monitoring well. A deep monitoring well may be necessary if: 1) Contamination exists more than 10 feet below the water table or 2) the impacted aquifer is a drinking water aquifer or is hydraulically connected to the aquifer(s) presently utilized by a water supply well located within 500 feet of the release source.

If contamination is present at depth in the aquifer or in deeper aquifers, additional deep wells may be required. Provide the following information if deep wells are installed:

Vertical Gradient (dv/dl)
Inferred GW Flow Direction

Provide the following information for the deep aquifer unit if it appears to be hydrogeologically distinct from the upper unit.

Porosity (n):
Hydraulic Conductivity (K)

Submit this RI report after completing a minimum of *two quarterly sampling events.* Groundwater monitoring should continue until MPCA response is received.

Section 7: Evaluation of Natural Attenuation

Refer to the fact sheet #3.21 *Assessment of Natural Attenuation at Petroleum Release Sites.*
Note: Evaluation of natural attenuation is not required unless requested by MPCA staff.

7.1 Attach Table 12 - Natural Attenuation Parameters. Discuss the results. Specifically, compare the concentrations of the inorganic parameters inside and outside the plume.
Natural Attenuation Parameters were not analyzed per MPCA directive.

7.2 In your judgment, is natural biodegradation occurring at this site? Please Explain. ☐*Yes* ☐*No*

If active remediation is anticipated, discuss reasons why natural attenuation (including biodegradation) can not adequately remediate the contaminants to acceptable risk levels.

Section 8: Well Receptor Information/Assessment

Include in Appendix E, copies of the water supply well logs obtained from MGS, MDH, drillers, and where applicable, from County well management authorities.

8.1 Attach Table 13 - Properties Located Within 500 Feet of the Release Source. Provide a map identifying the features listed in Table 13.

8.2 Were all property owners within 500 feet of the release source successfully contacted to determine if water wells are present? **If *NO*,** please explain. *No*

Several residential property owners were not available for contact when Coteau personnel were onsite. A water well survey form was left at each property where the occupant was not available. The survey form indicates that if the survey is not returned to Coteau, it is assumed that no water well is present on the property. No water well survey forms have been returned to Coteau as of the date of this report.

8.3 Attach Table 14 - Water Supply Wells Located within 500 Feet of the Release Source and Municipal or Industrial Wells Within ½ Mile.

8.4 Discuss the results of the ground water receptor survey and any analytical results from sampling conducted at nearby water wells. Comment on the risks to water supply wells identified within 500 feet from the release source as well as the risk posed by or to any municipal or industrial wells found within ½ mile. Specifically indicate whether water supply wells identified utilize the impacted aquifer. (Note: an impacted aquifer separated from another aquifer by a clay lens may not be considered a separate aquifer).

Water supply well boring records were obtained from the MGS. A domestic water supply well (#00458780) is located approximately 320 feet southeast of the release source area. This water well is at a total depth of 45 feet bg and had a static water level of 12 feet bg at the time of construction. Two municipal water supply wells (00102020 and 00215137) are located approximately 2,590 feet southeast and 1,120 feet northeast of the release source area, respectively. These municipal water wells are at total depths of 166 and 220 feet bg, respectively, and had static water levels of 21 and 22 feet bg, respectively, at the time of construction. The above-mentioned water wells appear to utilize the impacted aquifer beneath the site. The risk to these water wells from petroleum impacts at the former K-C Kwik Stop property appears to be present, but minimal. Water samples were not collected from any of the above-mentioned water wells.

8.5 Is municipal water available in the area? *Yes*

8.6 Are there any plans for ground water development in the impacted aquifer within 1/2 mile of the site, or one mile down-gradient of the site if the aquifer is fractured? Please give the name, title and telephone number of the person that was contacted for this information (below). *No*

Mr. Mike Rooney Telephone: (320) 346-2630

Section 9: Surface Water Risk Assessment

9.1 Are there any surface waters or wetlands located within ¼ mile of the site? *No*

If *YES*, list them:_____

9.2 If surface water is present down-gradient of the site, is there a clean down-gradient monitoring well (temporary or permanent) located between the site and the surface water? *N/A*

9.3 If you answered *NO* to question 9.2, we assume that contamination discharges to surface water. Therefore, complete the following information:

Name of receiving water:	
Receiving water classification	
ORVW?	☐ *Yes* ☐ *No*
Plume width, (W):	feet
Plume thickness, (H):	feet
Hydraulic conductivity, (K):	gal/day/ft^2
Horizontal gradient, (dh/dl):	(unitless)
Discharge, (Q) = H*W*K*(dh/dl)/1440	gal/min
Applicable chronic standard (7050 or 7052)	
Applicable max. standard (7050 or 7052)	
Applicable FAV (7050 or 7052)	
Contaminant concentration in ground water	

9.4 If you answered *YES* to question 9.2, identify the clean down-gradient boring or monitoring well, the distance to the surface water feature, and discuss the contamination risk potential.

Section 10: Vapor Risk Assessment/Survey

10.1 Is there a history of vapor impacts in the vicinity of the site ? *No*

If *YES*, describe:

10.2 Is there any indication that free product or contaminated ground water may be traveling off-site within the utility corridors? *No*

If *YES*, utility backfill investigation is required (refer to Fact Sheet 3.19). Discuss the investigation rationale and results.

10.3 Discuss the potential for vapor migration/accumulation near the site. Your discussion should consider: Soil types, product type, presence and distribution of free product or high concentrations of dissolved product. Also, using cross-sections to illustrate the relationship, compare the depth of contamination with the location of underground utility lines, location and depth of storm and sanitary sewers, and location of nearby basements and sumps.

Locations and depths of utility lines in the vicinity of the release source area were discussed in section 6.11. The average depth-to-water levels measured in the monitor wells on August 12 and November 12, 2002 and February 27 and May 1, 2003 were 9.04, 9.48, 8.90 and 10.00 feet bg, respectively. A PVC municipal water line located approximately 40 feet east of the property is at a depth of approximately seven (7) feet bg. A concrete storm sewer line located approximately 25 feet east of the release source area is at a reported depth of six (6) feet bg. Sanitary sewer lines located near the site are constructed of PVC pipe and are at a reported depth of approximately eight (8) feet bg. Based on this information, it appears that the potential for vapor migration/accumulation in the vicinity of the site is present.

10.4 Conduct a vapor survey if the vapor risk assessment indicated a risk of vapor impacts to buildings or utilities. Ask occupants of nearby buildings if they have smelled petroleum odors. See fact sheet 3.20 *Potential Receptor Surveys and Risk Evaluation Procedures at Petroleum Release Sites*. Identify all vapor monitoring locations on an attached site map by labeling each monitoring location with a number. Tabulate the list of vapor monitoring locations in Table 15. Vapor monitoring methods, including instruments used, must be discussed in Appendix C. Provide a detailed description of each vapor monitoring location and an interpretation of the vapor monitoring results below.

A vapor survey was conducted in the vicinity of the site on August 8, 2002. Eight (8) residential basements, four (4) sanitary sewer manholes, three (3) storm sewer manholes and two (2) storm sewer drain basins were screened for organic vapors during the survey. A PID reading of 2.1 ppm was measured in one (1) sanitary sewer manhole (location #23 on Figure 10). A water sample was collected from the manhole. A PID reading was taken from the water sample headspace, with a resulting reading of 0.5 ppm. No other elevated organic vapor concentrations were identified during the vapor survey on August 8, 2002.

10.5 Attach Table 15 - Results of Vapor Monitoring.

Section 11: Discussion

11.1 Discuss the risks associated with the remaining soil contamination:

Municipal water, sanitary sewer and storm sewer lines are present in the vicinity of the site. However, soil impacts appear to be limited to the former K-C Kwik Stop property (Figures 4 and 5). Soil borings B-2, B-6, B-8 and B-7 surround the release source area, and are clean or have relatively low soil impacts. A copper water service line extends onto the property and is located within the impacted area. However, due to the copper construction of the water service line, the risk of impacts to the water line appear to be minimal. It appears that the extent of soil impacts has been defined. Therefore, risks associated with the remaining soil contamination on the property appear to be minimal.

11.2 Discuss the risks associated with the impacted ground water:

It appears that a resource aquifer has been impacted. Based on two (2) ground water monitoring events conducted on August 6 and November 6, 2002, ground water flow in the vicinity of the site to the east-northeast. During two (2) monitoring events conducted on February 27 and May 1, 2003, ground water flow was to the east-southeast. Additional monitoring will be required to determine the predominant flow direction at the site. The extent of ground water impacts appears to be defined. Based on the anticipated easterly ground water flow direction, there appears to be a potential risk to PVC water and sanitary sewer lines and concrete storm sewer lines located east and northeast of the site. In addition, several residential basements are located approximately 60 feet east of the release source area, in the apparent downgradient direction from the site. A vapor survey was conducted in the vicinity of the site on August 8, 2002. No elevated concentrations of organic vapors were identified during the vapor survey. Also, one (1) domestic and two (2) municipal water supply wells are located within a calculated five (5) year travel time of the contaminant plume. The ground water impacts at the site appear to pose a potential risk to these water wells, but because of the distances of the wells from the release source area and natural attenuation of the petroleum impacts over time, the risk appears to be minimal.

11.3 Discuss other concerns not mentioned above:

NONE

Section 12: Conclusions and Recommendations

12.1 Recommendation for site:

- ☐ site closure
- ☐ additional vapor monitoring
- X additional ground water monitoring
- ☐ active remediation

12.2 Base the recommendation above on fact sheet #3.1 *Leaking Underground Storage Tank Program*. Describe below how you applied the policy to support your recommendation. If closure is recommended, please summarize significant site investigative events and describe how site specific risk issues have been adequately addressed or minimized to acceptable low risk levels.

It appears that a resource aquifer has been impacted. The extent of ground water impacts has been defined. A risk of vapor migration and/or accumulation and a risk to water supply wells in the vicinity of the site appears to be present. Water wells within 0.5 mile of the site appear to utilize the impacted resource aquifer. No surface water is located within 0.25 mile of the site.

12.3 If additional monitoring is recommended, indicate the proposed monitoring schedule and frequency. Conduct quarterly monitoring until the MPCA responds to this report.

Coteau recommends quarterly ground water monitoring of all monitor wells at the site for a period of one (1) year. Fluid levels will be measured in the monitor wells on a quarterly basis to determine the predominant ground water flow direction at the site. If free-phase product is identified in any of the wells, product recovery will be initiated immediately utilized a disposable polyethylene bailer. A petroleum-absorbent sock will be placed in the well immediately following free product recovery. Ground water samples will be collected from all wells not containing 0.10 foot or greater of free product on a quarterly basis for laboratory analysis of BTEX and TPH as GRO. Coteau also recommends that sanitary and storm sewer manholes located on Western Avenue, south of Highway 55, and residential basements at 100, 110 and 120 South Western Avenue be surveyed for organic vapors on a semi-annual basis.

12.4 If active remediation is proposed, then recommend a conceptual approach by listing the remedial technologies or combination of technologies that are likely feasible. MPCA staff will review this RI report at a higher than normal priority to determine if active remediation is required. We will respond with either a request for proposal for additional monitoring or a Corrective Action Design report.

Section 13: Figures

Attach the following figures in order of discussion in the text:

X Site location map using a U.S. Geological Survey 7.5 minute quadrangle map.

X One or more site map showing:
- Structures
- Locations and depths of on-site buried utilities
- All past and present petroleum storage tanks, piping, and dispensers
- Extent of soil excavation
- Boring and well locations (including any drinking water wells on site)
- Horizontal extent of soil contamination
- Horizontal extent of ground water contamination
- Location of end points for all geologic cross sections.

Distinguish sequential elements of investigations by dates, symbols, etc. in the key.

X Ground water gradient contour maps (for sites with monitoring wells) for each gauging event.

X Well receptor survey map showing 1/2 mile radius, 500 foot radius, water supply wells, other potential sources of contamination, using a U.S. Geological Survey 7.5 minute quadrangle.

X Vapor survey map showing utilities and buildings with basements and monitoring locations (if a survey was required).

X Provide at least two (2) geologic cross sections, including utilities.

Tables

Section 14: Tables

Table 1
Tank Information

Tank #	UST or AST	Capacity	Contents	Year Installed	Status*	Condition
1	UST	4,000	Diesel Fuel	1986	Removed 4-17-02	Good
2	UST	6,000	Gasoline	1986	Removed 4-17-02	Fair; some pitting
3	UST	6,000	Gasoline	1986	Removed 4-17-02	Fair

*Indicate: *removed **(date)**, abandoned in place **(date)**, or currently used*
Notes:

Table 2
Results of Soil Headspace Screening

Depth (ft)	Soil Boring 1	2	3	4	5	6	7	8	9	10
0-4	NS**	11.5*	ND	4.1	402.0*	61.0*	ND	4.0	4.3	ND
4-8	NS**	63.1*	ND	808.2	250.0*	60.0*	3.4	13.0*	11.5*	0.5
8-12	653.0	198.0	881.0	1,363.0	92.0*	32.0*	15.0	11.0*	4.0	2.8
12-16	308.0	40.1	1,130.0	212.2	94.0	2.3	50.0	8.6	2.8	0.7
16-20	3.9	2.9	NS	21.9	526.0	ND	ND	ND	1.4	0.4
20-24	0.2	3.2	1.1	2.4						
24-28	ND	ND	ND	ND						
28-32	ND									

List instruments used and discuss field methods and procedures in Appendix C.
Notes: NS = Not sampled ND = Nondetectable
** PID malfunction suspected.*
*** Soil boring B-1 was sampled non-continuously to a depth of 10 feet because the boring was completed in the UST excavation basin.*

Table 3
Analytical Results of Soil Samples

Boring, Depth(ft)	Date Sampled	Benzene	Toluene	Ethyl benzene	Xylenes	GRO	DRO	Lab Type
B-1(9-12)	6-13-02	19.000	300.000	140.000	610.000	4,600	NA	F
B-2(10-12)	6-13-02	<0.050	<0.050	<0.050	0.380	4	NA	F
B-3(9-12)	6-13-02	23.000	660.000	320.000	2,100.000	9,100	NA	F
B-3(15-18)	6-13-02	<1.000	21.000	13.000	65.000	490	NA	F
B-4(9-11)	6-13-02	29.000	590.000	180.000	800.000	5,900	NA	F
B-5(8-10)	8-6-02	<0.050	<0.050	<0.050	<0.060	<4	NA	F
B-5(17-19)	8-6-02	0.260	0.110	0.410	2.100	17	NA	F
B-6(2-4)	8-7-02	<0.050	<0.050	<0.050	<0.060	<4	NA	F
B-6(8-10)	8-7-02	<0.050	<0.050	<0.050	<0.060	<4	NA	F
B-7(8-10)	8-7-02	<0.050	<0.050	<0.050	<0.060	<4	NA	F
B-7(12-14)	8-7-02	<0.050	<0.050	<0.050	<0.060	<4	NA	F
B-8(8-10)	8-7-02	<0.050	<0.050	0.090	0.270	<4	NA	F
B-8(13-15)	8-7-02	<0.050	<0.050	<0.050	<0.060	<4	NA	F
B-9(8-10)	8-7-02	<0.050	<0.050	<0.050	<0.060	<4	NA	F
B-10(10-12)	2-4-03	<0.100	<0.100	<0.070	<0.200	<4	NA	F

Report results in mg/kg. Use less than symbols to show detection limit. Indicate mobile or fixed based in the lab type column.
Notes: NA = Not analyzed for parameter

Table 4
Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived)

Boring, Depth (ft)	Date Sampled	MTBE					Lab Type
B-1(9-12)	6-13-02	94.000					F
B-2(10-12)	6-13-02	<0.050					F
B-3(9-12)	6-13-02	67.000					F
B-3(15-18)	6-13-02	8.000					F
B-4(9-11)	6-13-02	150.000					F
B-5(8-10)	8-6-02	<0.050					F
B-5(17-19)	8-6-02	0.300					F
B-6(2-4)	8-7-02	<0.050					F
B-6(8-10)	8-7-02	<0.050					F
B-7(8-10)	8-7-02	<0.050					F
B-7(12-14)	8-7-02	<0.050					F
B-8(8-10)	8-7-02	<0.050					F
B-8(13-15)	8-7-02	<0.050					F
B-9(8-10)	8-7-02	<0.050					F
B-10(10-12)	2-4-03	<0.120					F

Report results in mg/kg. Indicate other contaminants (either petroleum or non-petroleum derived) detected in soil collected from borings.
Notes:

Table 5
Water Level Measurements and Depths of Water Samples Collected from Borings

	Soil Boring									
	1	2	3	4	5	6	7	8	9	10
Static Water level depth (ft)	10.2	9.7	12.85	10.2	---	NM	NM	NM	NM	NM
Sampled Depth (ft)	10.2	9.7	12.85	10.2	NS	NS	NS	NS	NS	NS

Describe in Appendix C, the methods and procedures used to measure water levels in borings.
Notes: Ground water samples were not collected from borings B-6, B-7, B-8, B-9 and B-10 because these borings were completed as monitor wells at the time of drilling. Ground water was not encountered in boring B-5 during drilling on August 6, 2002.

Table 6
Analytical Results of Water Samples Collected from Borings

Boring Number	Date Sampled	Sampled Depth	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	GRO	DRO	Lab Type
B-1	6-13-02	10.2	1,254.0	4,798.0	763.0	3,684.0	<20.0	44,993.0	NA	F
B-2	6-13-02	9.7	<0.010	98.0	66.0	761.0	<0.40	4,211.0	NA	F
B-3	6-13-02	12.85	101.0	4,696.0	1,259.0	7,057.0	<2.0	350,157.0	NA	F
B-4	6-13-02	10.2	209.0	9,054.0	2,686.0	16,028.0	<10.0	338,583.0	NA	F
Trip Blank										
Field Blank										
Lab Blank										
HRL			10	1000	700	10000				

Report results in ug/L. Use less than symbols to show detection limit. Indicate mobile or fixed based in the lab type column.
Notes: Ground water samples were not collected from borings B-5, B-6, B-7, B-8 and B-9. Borings B-6, B-7, B-8 and B-9 were completed as monitor wells at the time they were drilled.

Table 7
Other Contaminants Detected in Water Samples Collected from Borings (Petroleum or Non-petroleum Derived)

Boring Number	Date Sampled	1,2 DCA	EDB	1,2,,4-Tri methyl benzene	1,3,5-Tri methyl benzene	Naph-thalene	Isopropyl benzene	n-Propyl benzene
B-1	6-13-02	<3.0	<25.0	725.0	<1.0	1,265.0	<1.0	<1.0
B-2	6-13-02	<0.060	<0.50	336.0	100.0	75.0	7.0	11.0
B-3	6-13-02	<0.30	<2.5	2,338.0	1,008.0	825.0	144.0	488.0
B-4	6-13-02	<1.5	<12.5	6,246.0	1,960.0	2,940.0	227.0	915.0
Trip Blank								
Field Blank								
Lab Blank								
HRL (ug/L)		4	0.004			300		

Report results in ug/L. Indicate other contaminants (either petroleum or non-petroleum derived) detected in water samples collected from the borings, temporary wells or push probes.
Notes:

Table 8
Monitoring Well Completion Information

Well Number	Unique Well Number	Date Installed	Surface Elevation	Top of Riser Elevation	Bottom of Well (Elevation)	Screen Interval (Elev. - Elev.)
MW-1	672919	8-7-02	99.88	100.00	80.88	95.88-80.88
MW-2	672922	8-7-02	99.67	102.46	80.67	95.67-80.67
MW-3	672921	8-7-02	99.69	102.58	80.69	95.69-80.69
MW-4	672920	8-7-02	99.99	102.73	80.99	95.99-80.99
MW-5	672918	8-2-02	99.57	99.64	80.57	95.57-80.57
MW-6	672950	2-4-03	99.74	99.76	80.74	95.74-80.74

Notes: Benchmark is the top of riser of monitor well MW-1. Reference elevation = 100 feet

Table 9
Water Level Measurements in Wells

Well Number	Date Sampled	Depth of Water from Top of Riser	Product Thickness	Depth of Water Below Grade	Relative Groundwater Elevation	Water Level Above Screen (Y/N)
MW-1	8-12-02	8.97	---	8.85	91.03	N
	11-6-02	9.51	---	9.39	90.49	N
	2-27-03	10.76	---	10.64	89.24	N
	5-1-03	10.24	---	10.12	89.76	N
MW-2	8-12-02	11.97	---	9.18	90.49	N
	11-6-02	12.23	---	9.44	90.23	N
	2-27-03	13.39	---	10.60	89.07	N
	5-1-03	12.97	---	10.18	89.49	N
MW-3	8-12-02	11.95	---	9.06	90.63	N
	11-6-02	12.39	---	9.50	90.19	N
	2-27-03	13.67	---	10.78	88.91	N
	5-1-03	12.20	---	9.31	90.38	N
MW-4	8-12-02	12.03	---	9.29	90.70	N
	11-6-02	12.51	---	9.77	90.22	N
	2-27-03	13.74	---	11.00	88.99	N
	5-1-03	12.32	---	9.58	90.41	N
MW-5	8-12-02	8.89	---	8.82	90.75	N
	11-6-02	9.38	---	9.31	90.26	N
	2-27-03	10.60	---	10.53	89.04	N
	5-1-03	10.16	---	10.09	89.48	N
MW-6	2-27-03	11.10	---	11.08	88.66	N
	5-1-03	10.74	---	10.72	89.02	N

Describe in Appendix C, the methods and procedures used to measure water levels.
Notes:

Table 10
Analytical Results of Water Samples Collected from Wells

Well #	Date Sampled	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	GRO	DRO	Lab Type
MW-1	8-12-02	<0.010	<0.010	<0.010	<0.010	<0.40	<100.0	NA	F
	11-6-02	<0.010	<0.010	<0.010	<0.010	<0.40	<100.0	NA	F
	2-27-03	<1.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
	5-1-03	<1.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
MW-2	8-12-02	<0.010	<0.010	<0.010	<0.010	<0.40	<100.0	NA	F
	11-6-02	<0.010	<0.010	<0.010	<0.010	<0.40	<100.0	NA	F
	2-27-03	<1.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
	5-1-03	<1.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
MW-3	8-12-02	<0.010	<0.010	<0.010	<0.010	<0.40	<100.0	NA	F
	11-6-02	728.0	3,111.0	1,011.0	4,667.0	<40.0	18,550.0	NA	F
	2-27-03	349.0	307.0	655.0	1,790.0	NA	7,101.0	NA	F
	5-1-03	201.0	424.0	493.0	1,522.0	NA	5,827.0	NA	F
MW-4	8-12-02	<0.010	<0.010	<0.010	<0.010	<0.40	288.0	NA	F
	11-6-02	<0.010	<0.010	<0.010	<0.010	<0.40	186.0	NA	F
	2-27-03	9.4	<1.0	<1.0	<1.0	NA	206.0	NA	F
	5-1-03	5.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
MW-5	8-12-02	503.0	1,187.0	347.0	1,863.0	<4.0	13,919.0	NA	F
	11-6-02	1,167.0	5,320.0	647.0	3,548.0	<4.0	56,660.0	NA	F
	2-27-03	4,888.0	13,065.0	1,165.0	9,325.0	NA	54,146.0	NA	F
	5-1-03	2,566.0	12,436.0	1,089.0	5,809.0	NA	34,537.0	NA	F
MW-6	2-27-03	<0.010	<0.010	<0.010	<0.010	<0.40	<100.0	NA	F
	5-1-03	<0.010	<0.010	<0.010	<0.020	<0.40	<100.0	NA	F
Trip Blank	8-12-02	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	F
	11-6-02	<1.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
	2-27-03	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	F
	5-1-03	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	F
Field Duplicate	8-12-02	<1.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
	11-6-02	<1.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
	2-27-03	9.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
	5-1-03	<1.0	<1.0	<1.0	<1.0	NA	<100.0	NA	F
Lab Blank HRL(ug/L)		10	1000	700	10000				

Report results in ug/L. Use less than symbols to show detection limit. Indicate mobile or fixed based in the lab type column. Notes: NA = Not analyzed for parameter F = Fixed-based laboratory

Table 11
Other Contaminants Detected in Water Samples
Collected from Wells (Petroleum or Non-petroleum Derived)

Well Number	Date Sampled	1,2 DCA	EDB	1,2,4-Tri methyl benzene	1,3,5-Tri methyl benzene	Acetone	Naph-thalene	n-Propyl benzene	1,4-Dichloro benzene	Chloro-form
MW-1	8-12-02	<0.060	<0.50	<0.020	<0.020	<2.0	<0.070	<0.020	<0.080	<0.050
	11-6-02	<0.060	<0.50	<0.020	<0.020	<2.0	<0.070	<0.020	5.0	6.0
MW-2	8-12-02	<0.060	<0.50	<0.020	<0.020	<2.0	<0.070	<0.020	<0.080	<0.050
	11-6-02	<0.060	<0.50	<0.020	<0.020	<2.0	<0.070	<0.020	<0.080	<0.050
MW-3	8-12-02	<0.060	<0.50	<0.020	<0.020	<2.0	<0.070	<0.020	<0.080	<0.050
	11-6-02	<6.0	<50.0	1,011.0	<2.0	<200.0	9170	<2.0	<8.0	<5.0
MW-4	8-12-02	<0.060	<0.50	<0.020	<0.020	<2.0	<0.070	<0.020	<0.080	<0.050
	11-6-02	<0.060	<0.50	<0.020	<0.020	<2.0	<0.070	<0.020	<0.080	<0.050
MW-5	8-12-02	<0.60	<5.0	373.0	107.0	9100	281.0	<0.20	<0.80	<0.50
	11-6-02	<0.60	<5.0	866.0	254.0	<20.0	269.0	110.0	<0.80	<0.50
MW-6	2-27-03	<0.060	<0.50	<0.020	<0.020	<2.0	<0.070	<0.020	<0.080	<0.050
	5-1-03	<0.060	<0.50	<0.020	<0.020	<2.0	<0.070	<0.020	<0.080	<0.050
Field Blank										
Trip Blank										
Lab Blank										
HRL (ug/L)		4	0.004			700	300			60

Report results in ug/L. Indicate other contaminants (either petroleum or non-petroleum derived) detected in water samples collected from the borings, temporary wells or push probes.
Notes:

Table 12
Natural Attenuation Parameters

Monitoring Well	Sample Date	Temp. °C	pH	Dissolved Oxygen (mg/L)	Nitrate (mg/L)	(Fe II) (mg/L)	(H_2S, HS^-) (mg/L)
MW-1	NOT						
	ANALYZED						
MW-2							
MW-3							
MW-4							

In Appendix C, describe the methods and procedures used.
Notes

Table 13
Properties Located Within 500 Feet of the Release Source.

# (From Map)	Property Address	Water Well (Y or N)	How Determined*	Well Use**	Public Water Supply (Y or N)	Confirmed By City (Y or N)	Basement Or Sumps (Y or N)	Possible Petroleum Sources (Y or N)	Comments (including property use)
1	111 N. Western Ave.	N	VO	N/A	Y	Y	N	Unknown	Residential-Vacant
2	121 N. Western Ave.	N	Assumed	N/A	Y	Y	Y	Unknown	Residential-occupant not present
3	131 N. Western Ave.	N	PC	N/A	Y	Y	Y	N	Residential
4	141 N. Western Ave.	N	PC	N/A	Y	Y	Y	Unknown	Residential-refused access
5	141 S. Western Ave.	N	Assumed	N/A	Y	Y	Y	Unknown	Residential-occupant not present
6	121 S. Western Ave.	N	PC	N/A	Y	Y	Y	N	Residential
7	111 S. Western Ave.	N	PC	N/A	Y	Y	Y	N	Residential
8	100 N. Western Ave.	N	PC	N/A	Y	Y	Y	N	Residential
9	120 N. Western Ave.	N	Assumed	N/A	Y	Y	Y	Unknown	Residential-occupant not present
10	130 N. Western Ave.	Y	PC	Not Used	Y	Y	Y	N	Residential
11	110 S Western Ave.	Y	PC	Not Used	Y	Y	Y	N	Residential
12	120 S. Western Ave.	N	Assumed	N/A	Y	Y	Y	Unknown	Residential-occupant not present
13	130 S. Western Ave.	N	PC	N/A	Y	Y	Y	N	Residential
14	221 1st Street	N	PC	N/A	Y	Y	Y	N	Residential
15	201 School Ave.	N	Assumed	N/A	Y	Y	Y	Unknown	Residential-occupant not present
16	100 S. Western Ave.	N	Assumed	N/A	Y	Y	Y	Unknown	Residential-occupant not present
17	140 S. Western Ave.	N	Assumed	N/A	Y	Y	Y	Unknown	Residential-occupant not present
18	131 S. Western Ave.	N	Assumed	N/A	Y	Y	N	Unknown	Residential-occupant not present

**E.g., visual observation, personal contact, telephone, returned postcard, assumed (i.e., no postcard returned).*

***E.g., domestic, industrial, municipal, livestock, lawn/gardening, irrigation.*

PC = Personal Communication VO = Visual Observation

Table 14
Water Supply Wells Located Within 500 Feet of the Release Source and Municipal or Industrial Wells Within ½ Mile

Unique Well #	Ground Elevation	Total Depth (ft)	Base of Casing (ft)	Static Elevation	Aquifer	Use	Owner	Distance & Direction from source
00458780	1310	45	40	1298	QWTA	D	John Bohmer	320 feet SE
00102020	1308	166	141	1287	QBAA	M	City of Brooten	2,590 feet SE
00215137	1312	220	210	1290	QBAA	M	City of Brooten	1,120 feet NE

Notes: D = Domestic M = Municipal

Table 15
Results of Vapor Monitoring

Location # and description	Date	PID reading (ppm)	Percent of the LEL
3-Residential Basement	8-8-02	0.0	000
6-Residential Basement	8-8-02	0.0	000
7-Residential Basement	8-8-02	0.0	000
8-Residential Basement	8-8-02	0.0	000
10-Residential Basement	8-8-02	0.0	000
11-Residential Basement	8-8-02	0.0	000
13-Residential Basement	8-8-02	0.0	000
14-Residential Basement	8-8-02	0.0	000
19-Sanitary Sewer Manhole (Approx. 12 feet deep)	8-8-02	Top-0.0 Middle-0.0 Bottom-0.0	Top-000 Middle-000 Bottom-000
20-Storm Sewer Manhole (Approx. 4 feet deep)	8-8-02	Top-0.0 Bottom-0.0	Top-000 Bottom-000
21-Sanitary Sewer Manhole (Approx. 15 feet deep)	8-8-02	Top-0.0 Middle-0.0 Bottom-0.0	Top-000 Middle-000 Bottom-000
22-Sanitary Sewer Manhole (Approx. 6 feet deep)	8-8-02	Top-0.0 Bottom-0.0	Top-000 Bottom-000
23-Sanitary Sewer Manhole (Approx. 6 feet deep)	8-8-02	Top-2.1* Bottom-0.0	Top-000 Bottom-000
24-Storm Sewer Manhole (No flow)	8-8-02	0.0	000
25-Storm Sewer Manhole (No flow)	8-8-02	0.0	000
26-Storm Sewer Basins	8-8-02	0.0	000

Notes: Location numbers must match locations on the site map. Provide a brief description of the monitoring point (e.g., sump, basement corner, sanitary sewer manhole, storm sewer basin, etc.).

** A water sample was collected from the sanitary sewer manhole (location #23). A PID reading was taken from the sample headspace, with a result of 0.5 ppm.*

Section 15: Appendices

Attach the following appendices.

X	*Appendix A*	Excavation Report Worksheet for Petroleum Release Sites.
X	*Appendix B*	Laboratory Analytical Reports for Soil and Ground Water. Include laboratory QA/QC data and laboratory certification number.
X	*Appendix C*	Methodologies and Procedures, Including Field Screening of Soil, Other Field Analyses, Soil Boring, Soil Sampling, Well Installation, and Water Sampling.
X	*Appendix D*	Geologic Logs of Soil Borings, Including Construction Diagrams of Temporary and Permanent Wells, and Copies of the Minnesota Department of Health Well Record.
X	*Appendix E*	Copies of Water Supply Well Logs With Legible Unique Numbers.
X	*Appendix F*	Grain Size Analysis, Hydraulic Conductivity Measurements, and Other Calculations.

Section 16: Consultant (or other) Information

By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leak site. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in reduction of reimbursement awards. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leak site that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. § 115.075 (1994) or Minn. R. 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.

MPCA staff are instructed to reject unsigned investigation reports or if the report form has been altered.

Name and Title:	Signature:	Date signed:
Andrew M. Schmidt, EIT Environmental Engineer	Andrew M. Schmidt	8-19-03
Nathan T. Hunke, P.G., M.S. Senior Hydrogeologist	N T H	9-27-03

Company and mailing address: Coteau Environmental

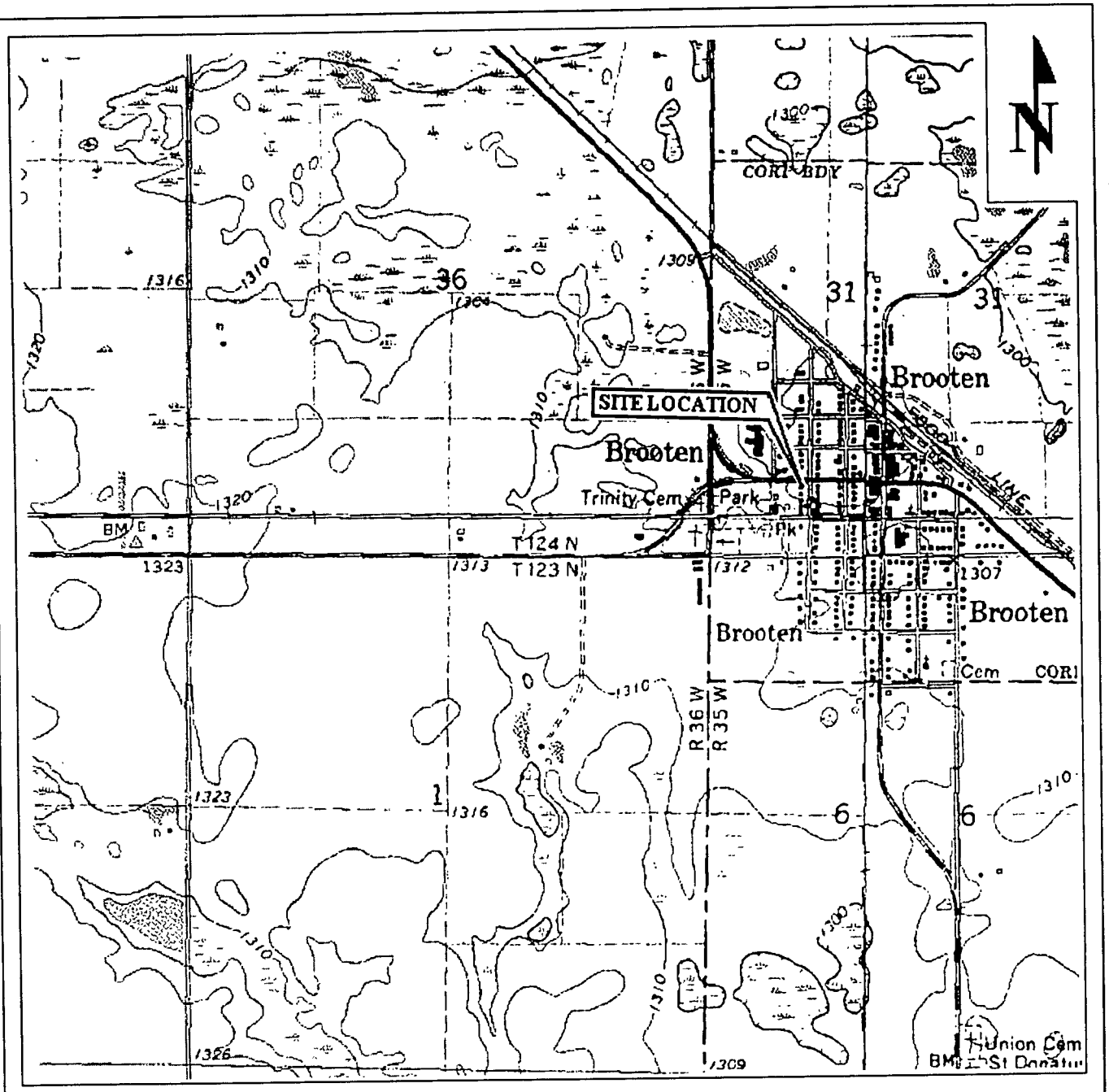
728 Janes Circle Drive SW

Alexandria, Minnesota 56308

Phone: (320) 846-4668 605-886-4009

Fax: (320) 846-4668

Figures



SCALE

0 0.5 MILES

TOPOGRAPHIC MAP
COPYRIGHT TOPOZONE.COM

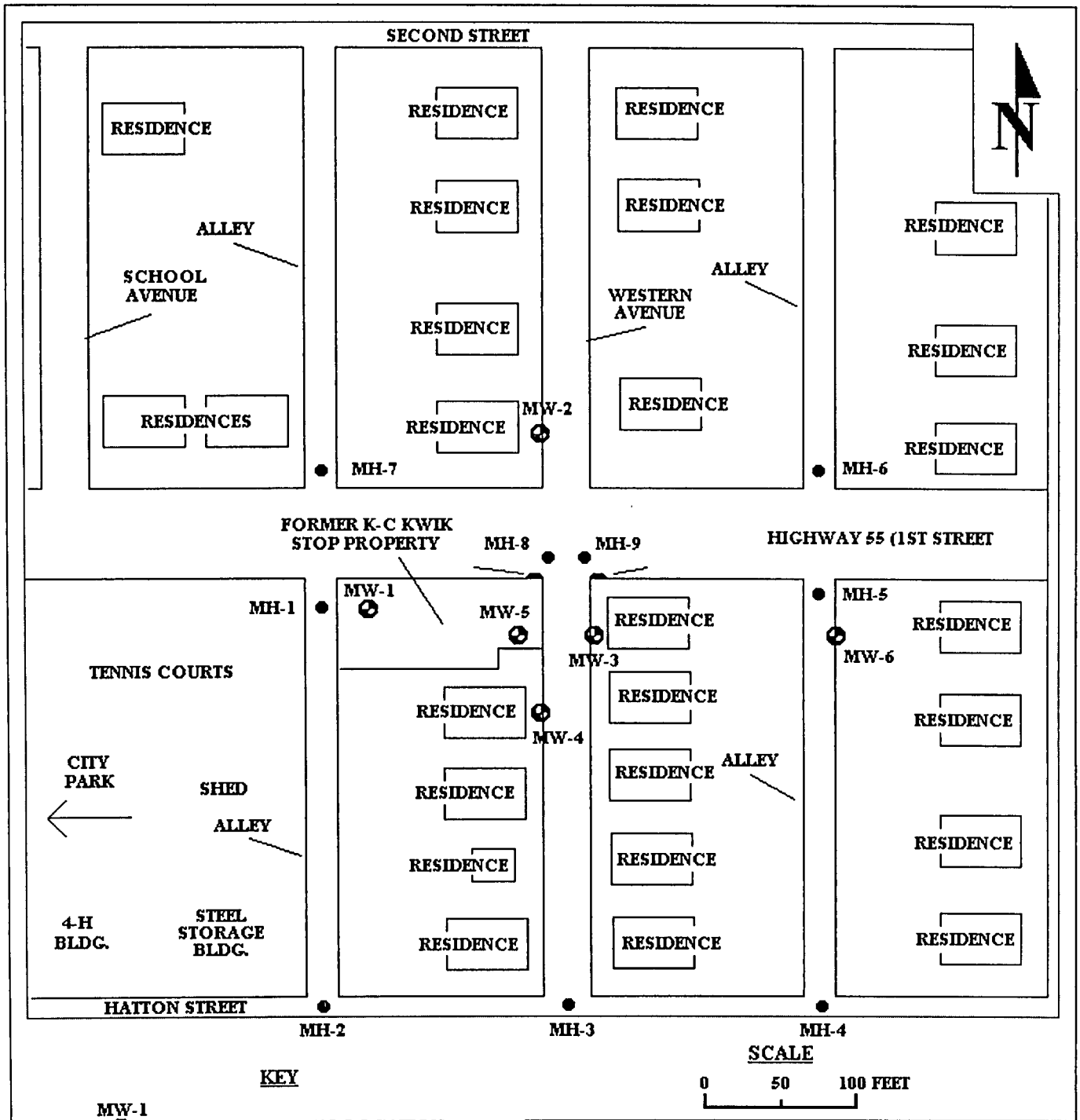
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

AREA LOCATION MAP

DATE	REVISED

COTEAU ENVIRONMENTAL
312 9TH AVE. SE, SUITE C
WATERTOWN, SD 57201
(605) 886-4009

DRAWN BY:	DATE: AUG 03	FIGURE: 1



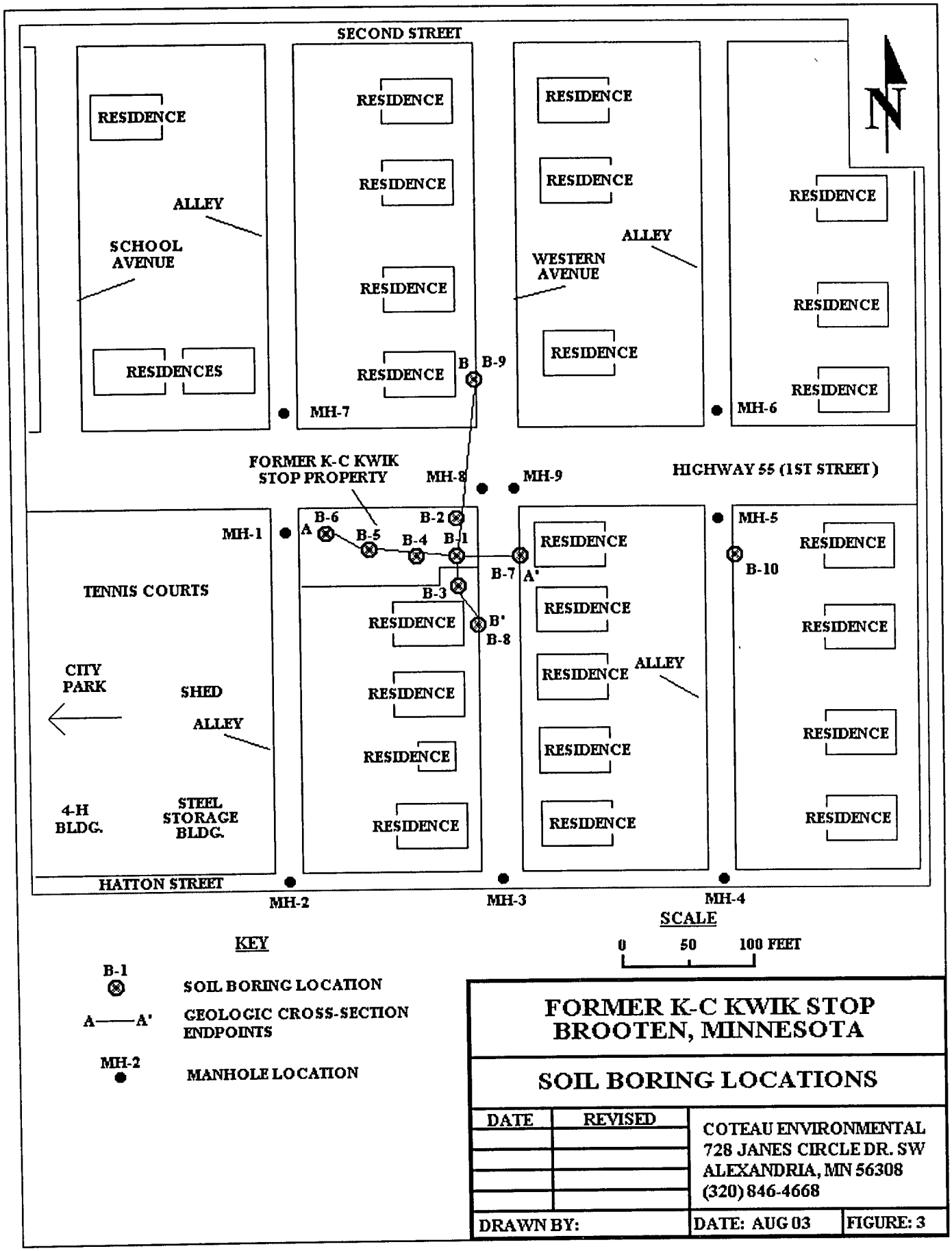
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

SITE MAP

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: AUG 03	FIGURE: 2



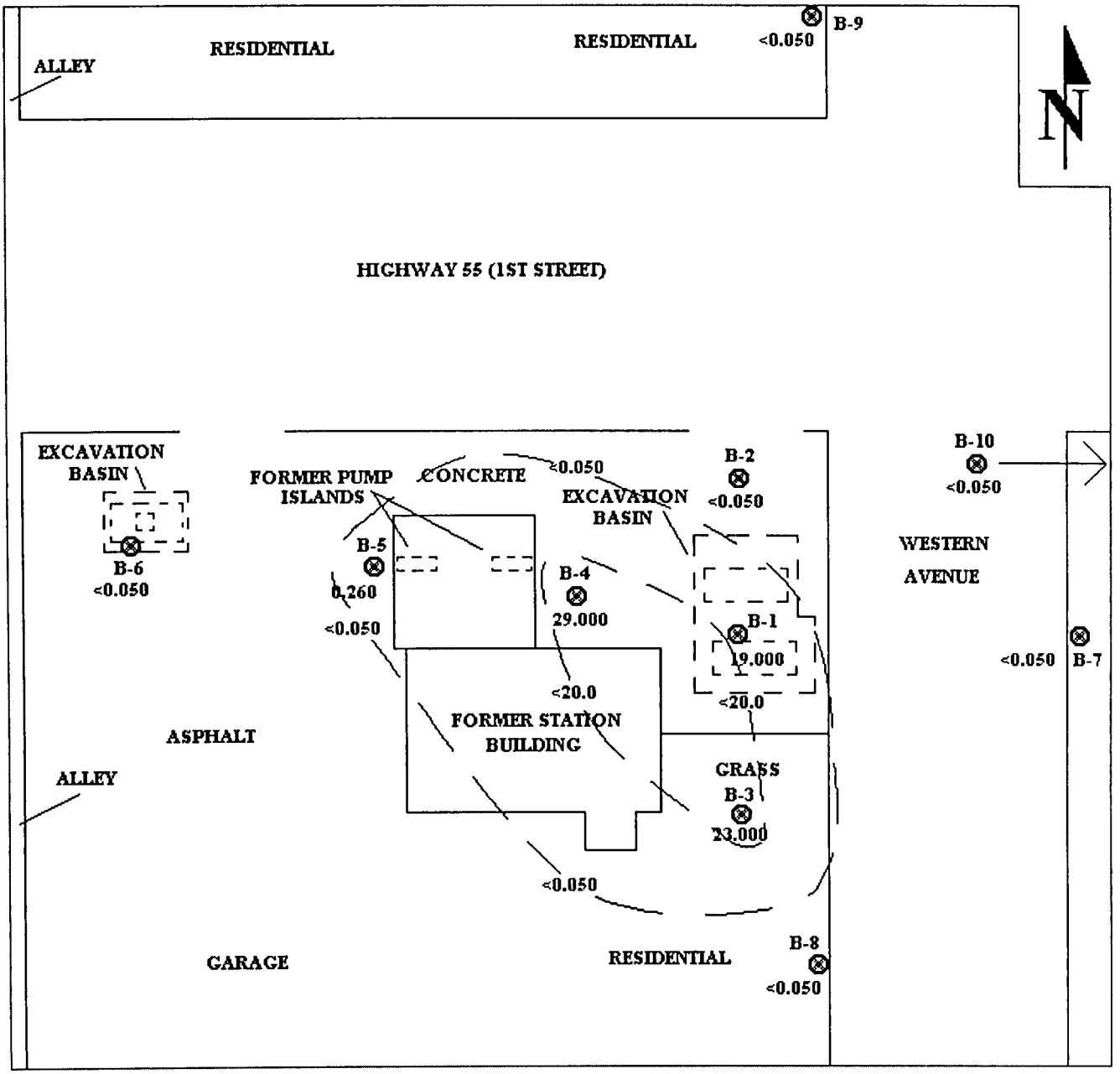
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

SOIL BORING LOCATIONS

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: AUG 03	FIGURE: 3



KEY

B-1 ⊗	SOIL BORING LOCATION
B-4 ⊗ 29.000	SOIL BENZENE CONC. (PPM)
—<0.050—	SOIL BENZENE CONCENTRATION CONTOUR (APPROXIMATE)
PPM	PARTS PER MILLION
UST	UNDERGROUND STORAGE TANK

SCALE

0 15 30 FEET

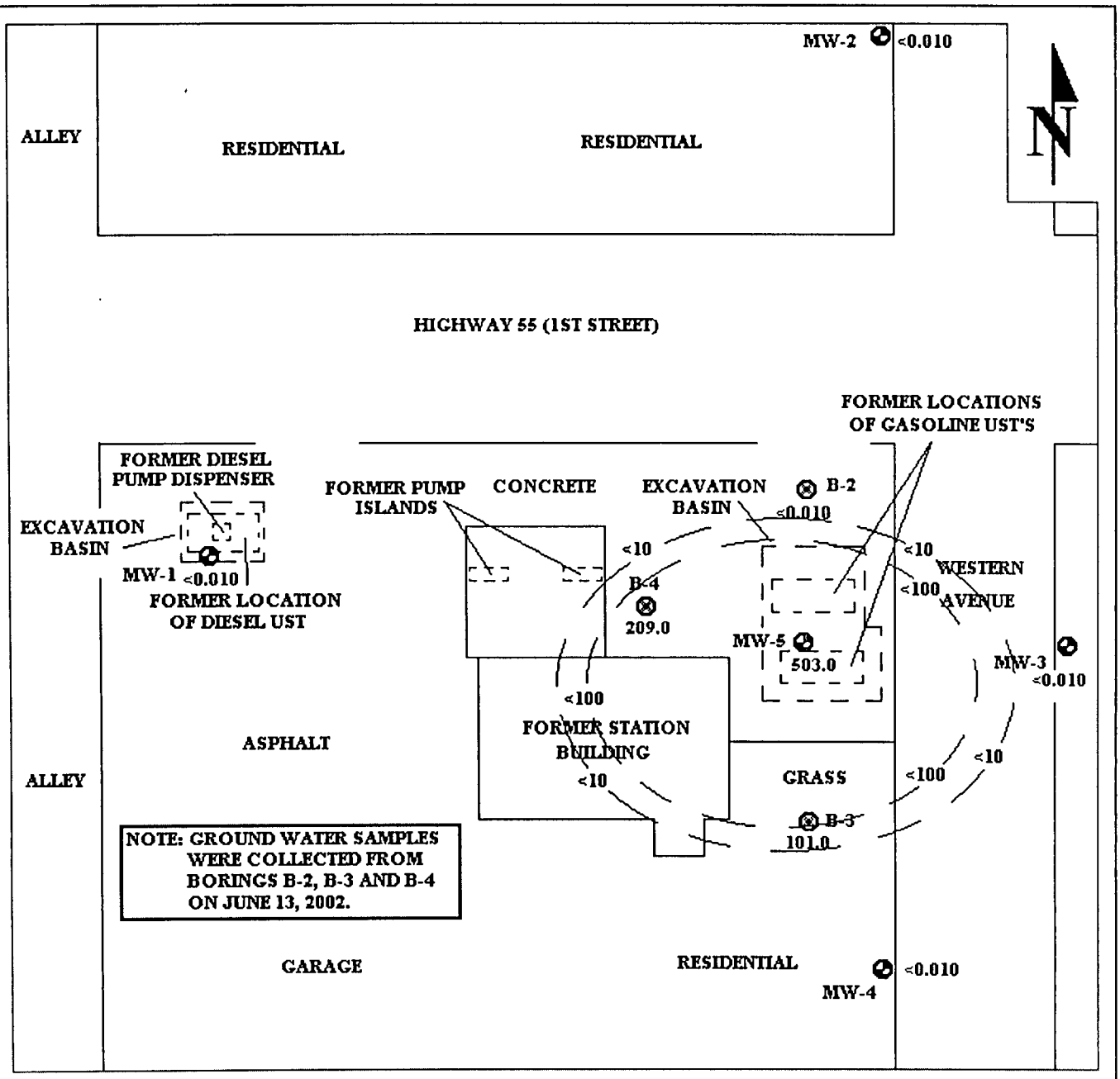
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

SOIL BENZENE CONC.

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: AUG 03	FIGURE: 4



KEY

MW-1	MONITOR WELL LOCATION
B-4	SOIL BORING LOCATION
MW-5 503.0	GROUND WATER BENZENE CONCENTRATION (PPB)
—<10—	GROUND WATER BENZENE CONC. CONTOUR (APPROXIMATE)
UST	UNDERGROUND STORAGE TANK

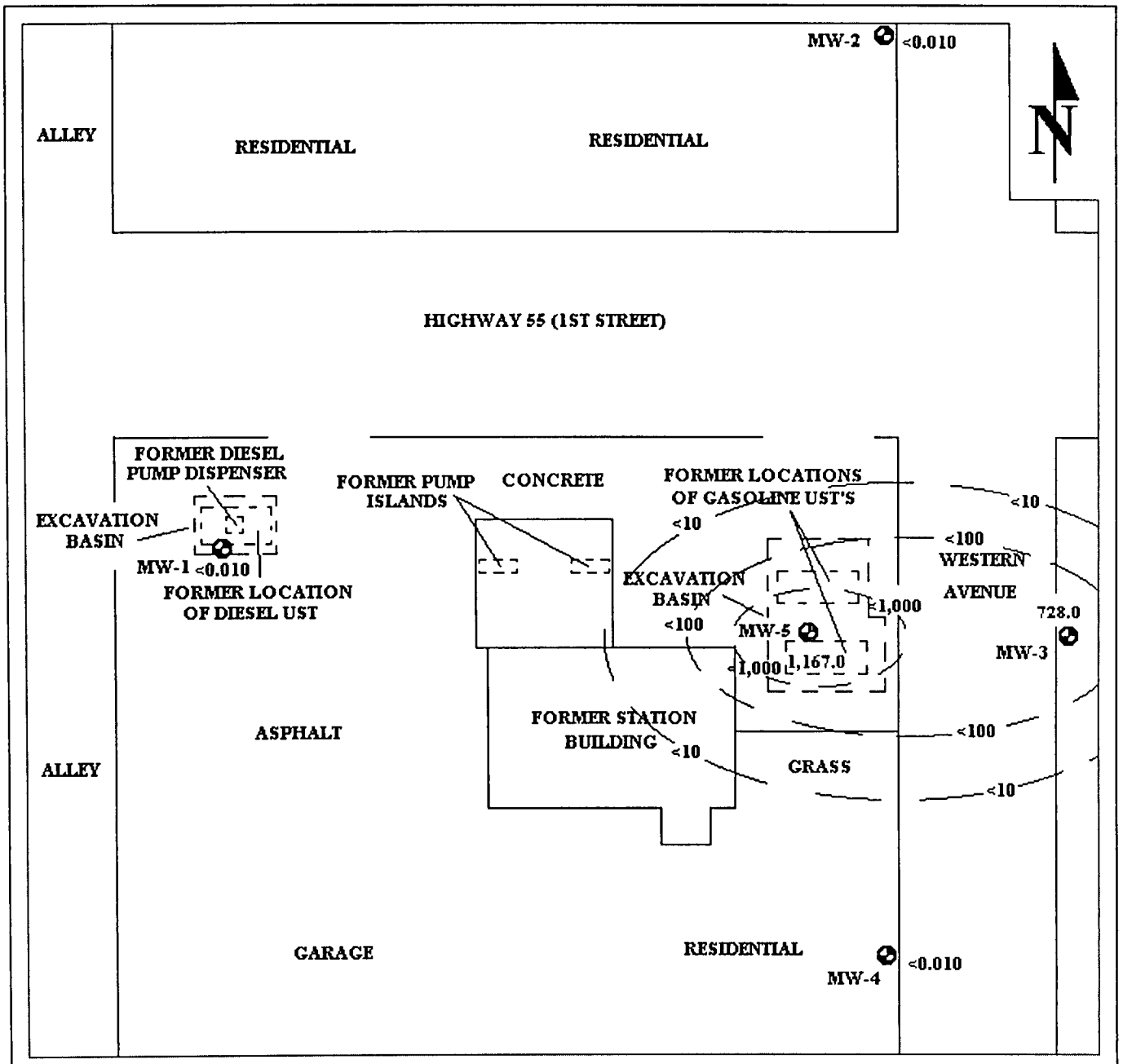
SCALE

0 15 30 FEET

FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

GROUND WATER BENZENE CONC.
AUGUST 12, 2002

DATE	REVISED	
		COTEAU ENVIRONMENTAL 728 JANES CIRCLE DR. SW ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:	DATE: AUG 03	FIGURE: 6A



KEY

MW-1	MONITOR WELL LOCATION
MW-5 1,167.0	GROUND WATER BENZENE CONCENTRATION (PPB)
—<10—	GROUND WATER BENZENE CONC. CONTOUR (APPROXIMATE)
UST	UNDERGROUND STORAGE TANK

SCALE

0 15 30 FEET

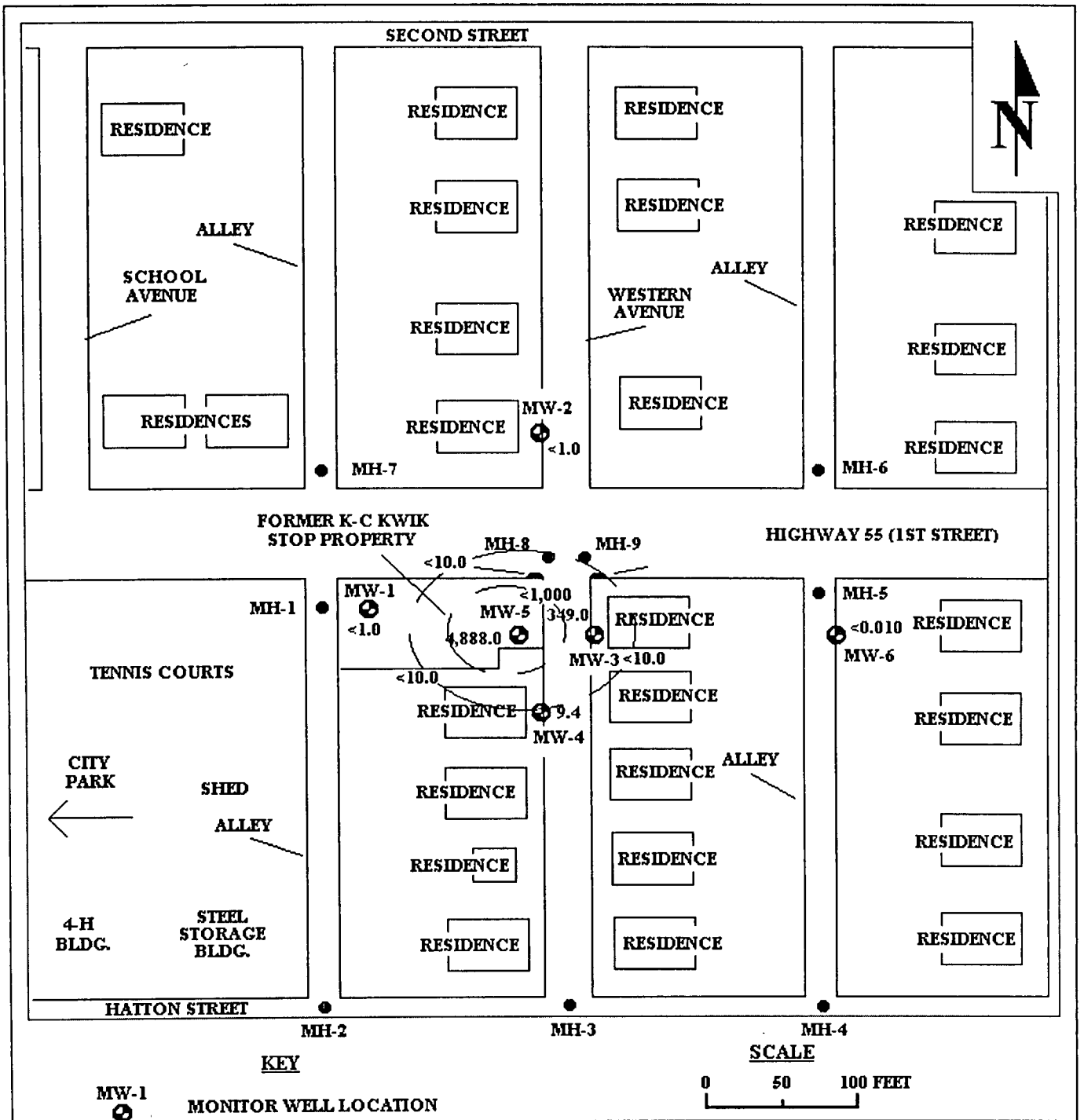
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

GROUND WATER BENZENE CONC.
NOVEMBER 6, 2002

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: AUG 03	FIGURE: 6B



KEY

MW-1	MONITOR WELL LOCATION
MW-5 4,888.0	GROUND WATER BENZENE CONC. (PPB)
—<1,000—	GROUND WATER BENZENE CONC. CONTOUR (APPROXIMATE)
PPB	PARTS PER BILLION
MH-2	MANHOLE LOCATION

SCALE

0 50 100 FEET

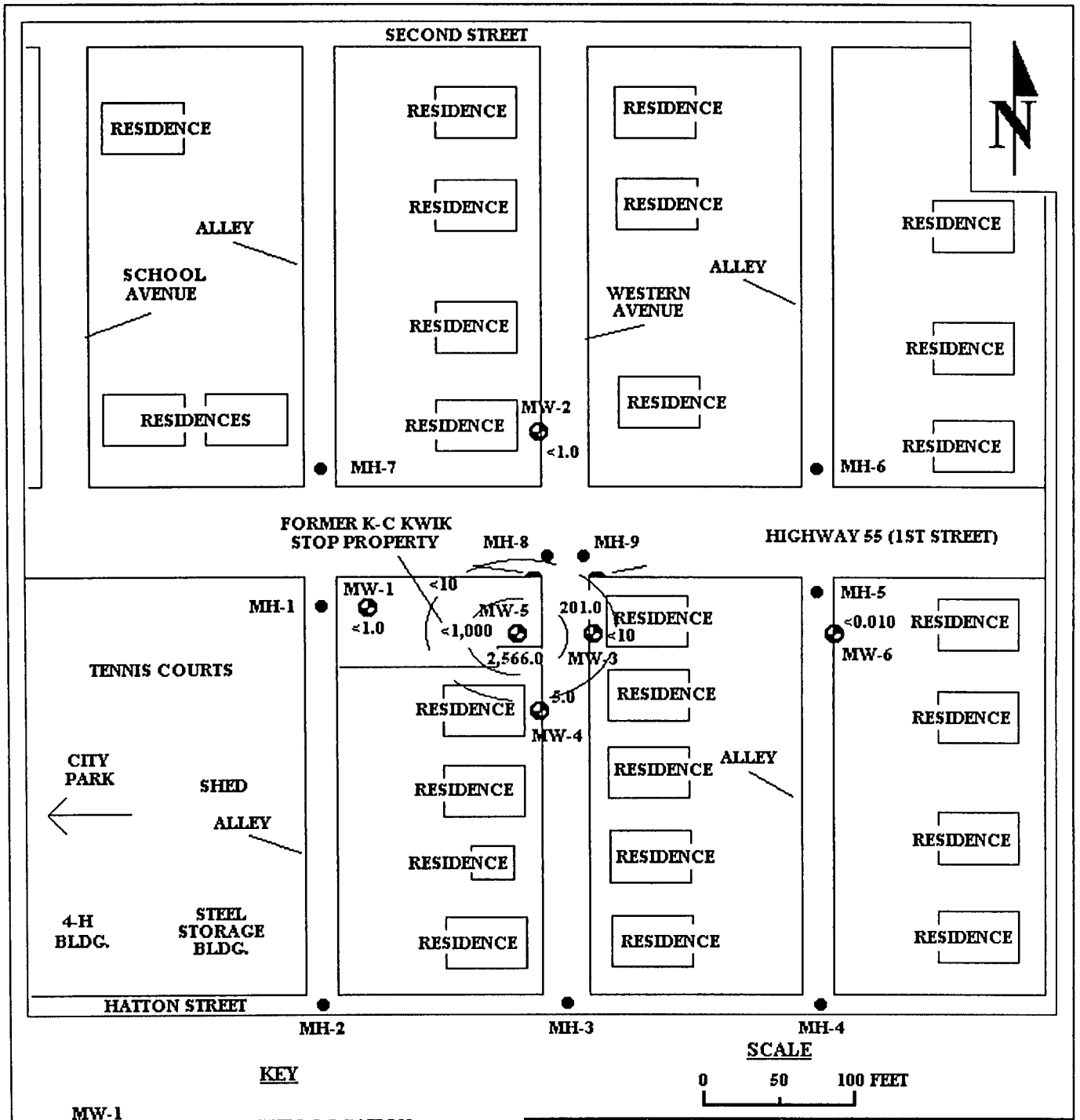
FORMER K-C KWIK STOP BROOTEN, MINNESOTA

GROUND WATER BENZENE CONC. FEBRUARY 27, 2003

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: AUG 03	FIGURE: 6C



SCALE

0 50 100 FEET

KEY

MW-1	MONITOR WELL LOCATION
MW-5 2,566.0	GROUND WATER BENZENE CONC. (PPB)
—<1,000—	GROUND WATER BENZENE CONC. CONTOUR (APPROXIMATE)
PPB	PARTS PER BILLION
MH-2	MANHOLE LOCATION

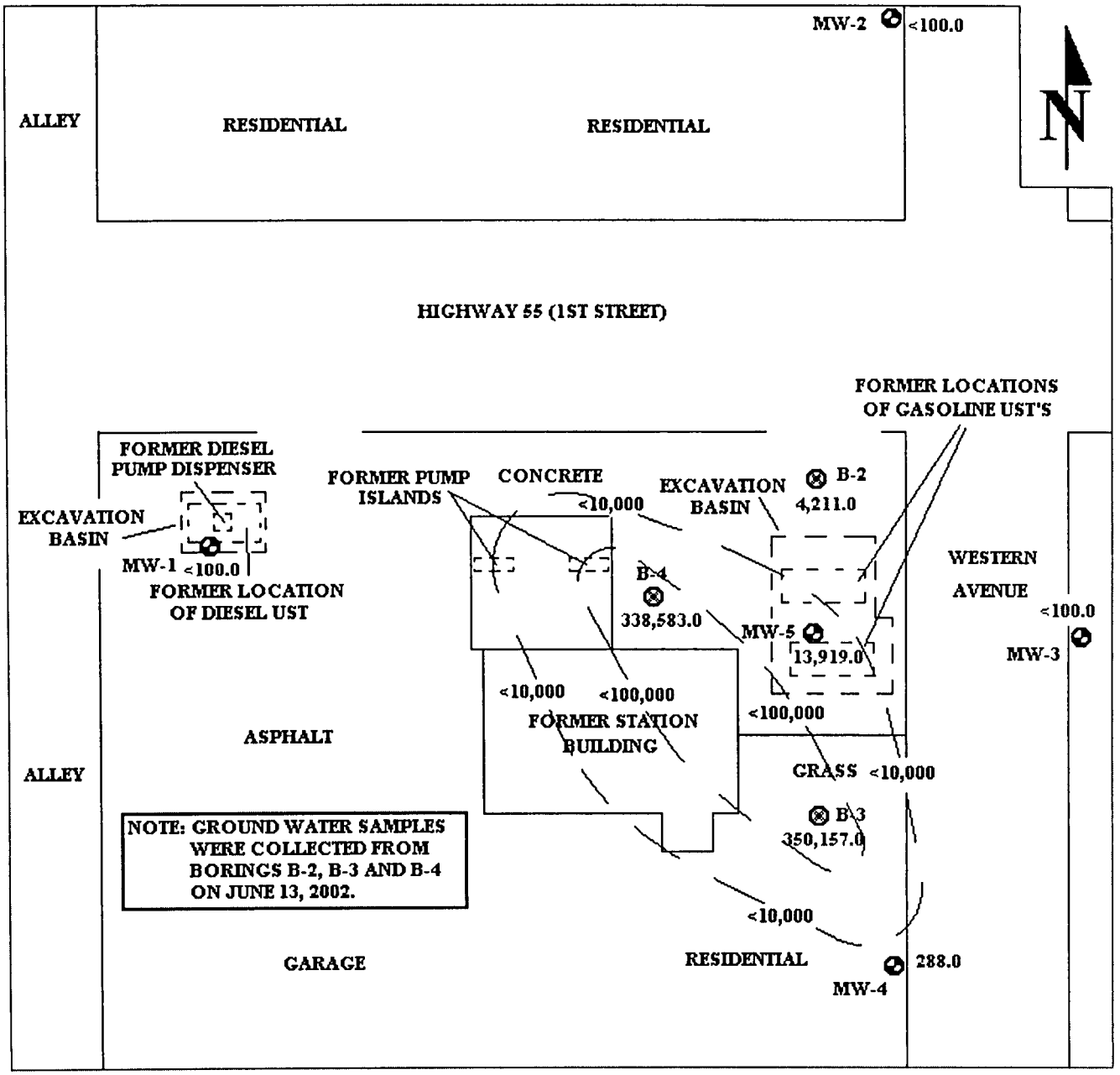
FORMER K-C KWIK STOP BROOTEN, MINNESOTA

GROUND WATER BENZENE CONC. MAY 1, 2003

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY: | DATE: AUG 03 | FIGURE: 6D



KEY

MW-1	MONITOR WELL LOCATION
B-3	SOIL BORING LOCATION
B-3 350,157.0	GROUND WATER TPH CONC. (PPB)
—<10,000—	GROUND WATER TPH CONC. CONTOUR (APPROXIMATE)
TPH	TOTAL PETROLEUM HYDROCARBONS
PPB	PARTS PER BILLION
UST	UNDERGROUND STORAGE TANK

SCALE

0 15 30 FEET

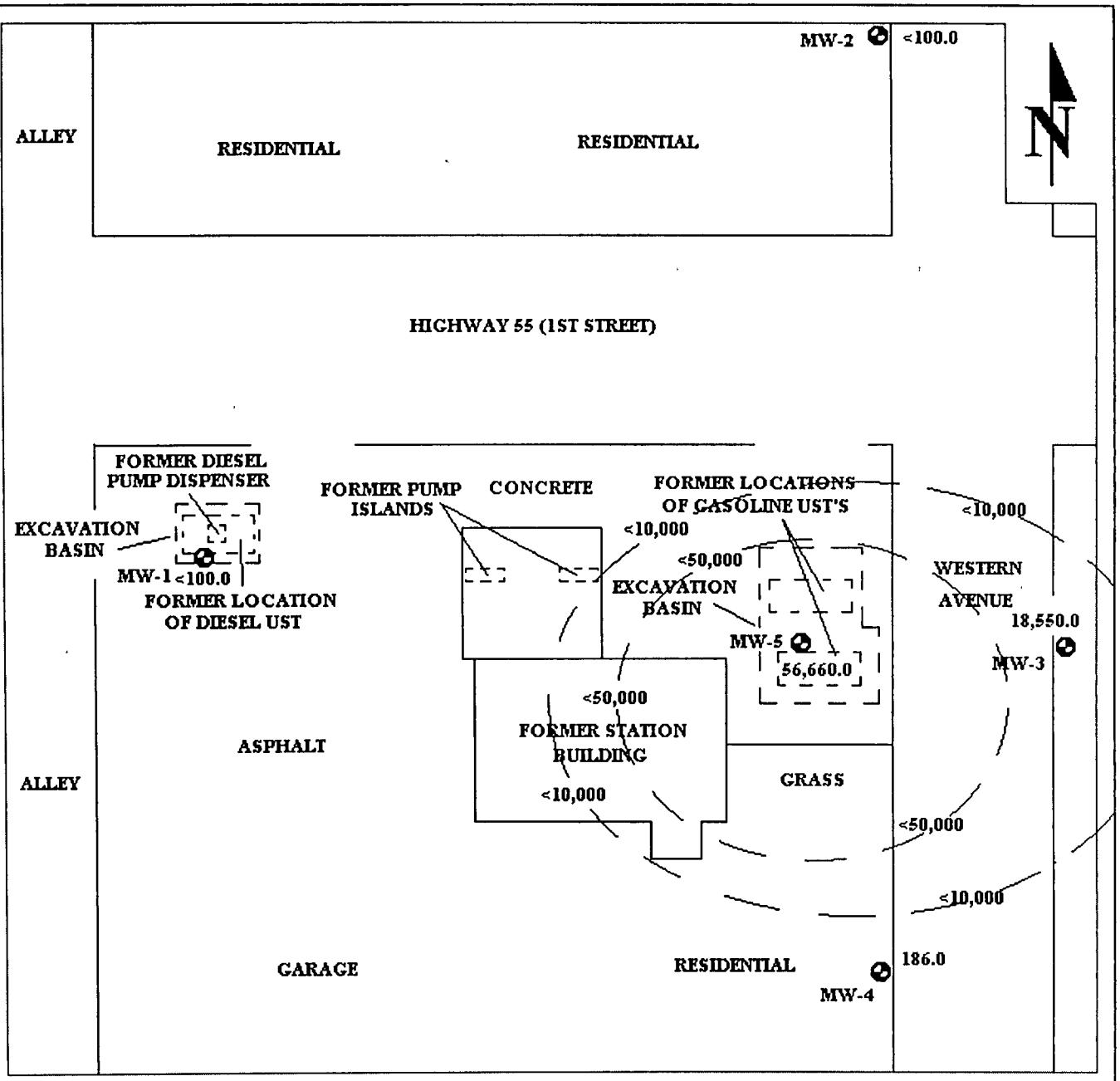
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

GROUND WATER TPH CONC.
AUGUST 12, 2002

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: AUG 03	FIGURE: 7A



KEY

MW-1	MONITOR WELL LOCATION
MW-5 56,660.0	GROUND WATER TPH CONC. (PPB)
—<10,000—	GROUND WATER TPH CONC. CONTOUR (APPROXIMATE)
TPH	TOTAL PETROLEUM HYDROCARBONS
PPB	PARTS PER BILLION
UST	UNDERGROUND STORAGE TANK

SCALE

0 15 30 FEET

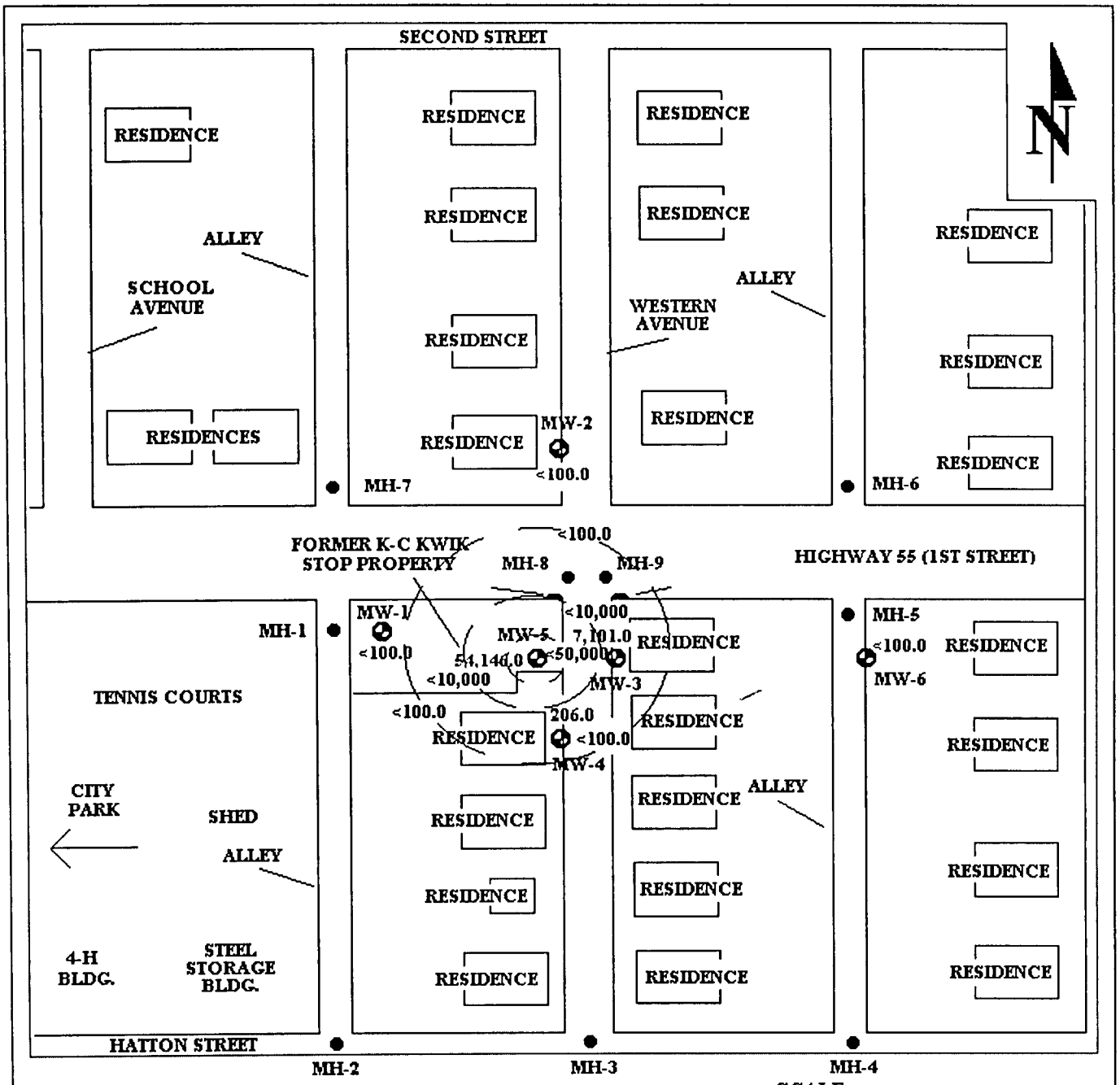
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

GROUND WATER TPH CONC.
NOVEMBER 6, 2002

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: AUG 03	FIGURE: 7B



KEY

MW-1 ●	MONITOR WELL LOCATION
MW-5 ● 54,146.0	GROUND WATER BENZENE CONC. (PPB)
—<50,000—	GROUND WATER BENZENE CONC. CONTOUR (APPROXIMATE)
TPH	TOTAL PETROLEUM HYDROCARBONS
PPB	PARTS PER BILLION
MH-2 ●	MANHOLE LOCATION

SCALE

0 50 100 FEET

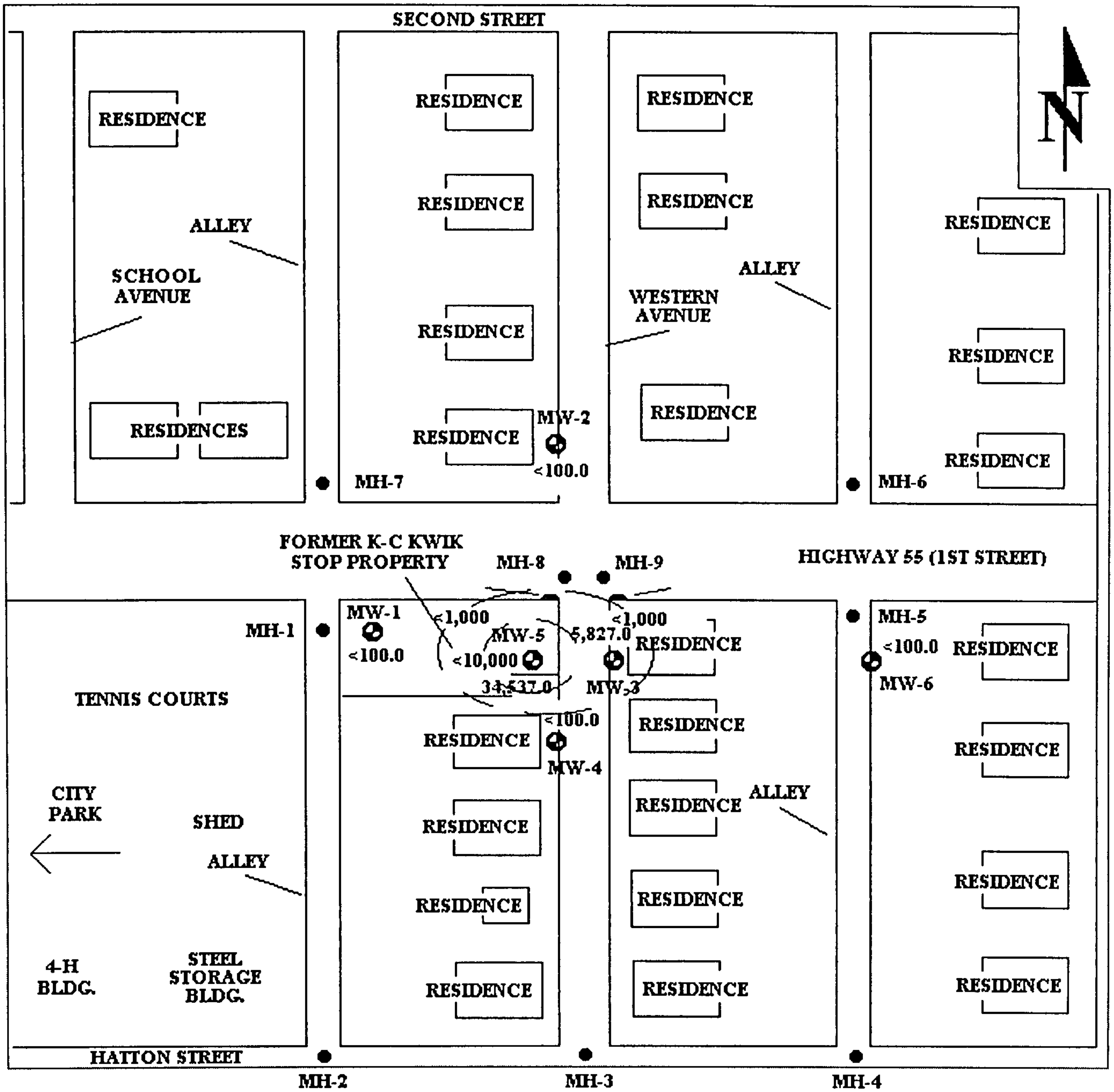
FORMER K-C KWIK STOP BROOTEN, MINNESOTA

GROUND WATER TPH CONC. FEBRUARY 27, 2003

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: AUG 03	FIGURE: 7C



SCALE

0 50 100 FEET

KEY

MW-1 ⊗	MONITOR WELL LOCATION
MW-5 ⊗ 34,537.0	GROUND WATER BENZENE CONC. (PPB)
—<10,000—	GROUND WATER BENZENE CONC. CONTOUR (APPROXIMATE)
TPH	TOTAL PETROLEUM HYDROCARBONS
PPB	PARTS PER BILLION
MH-2 ●	MANHOLE LOCATION

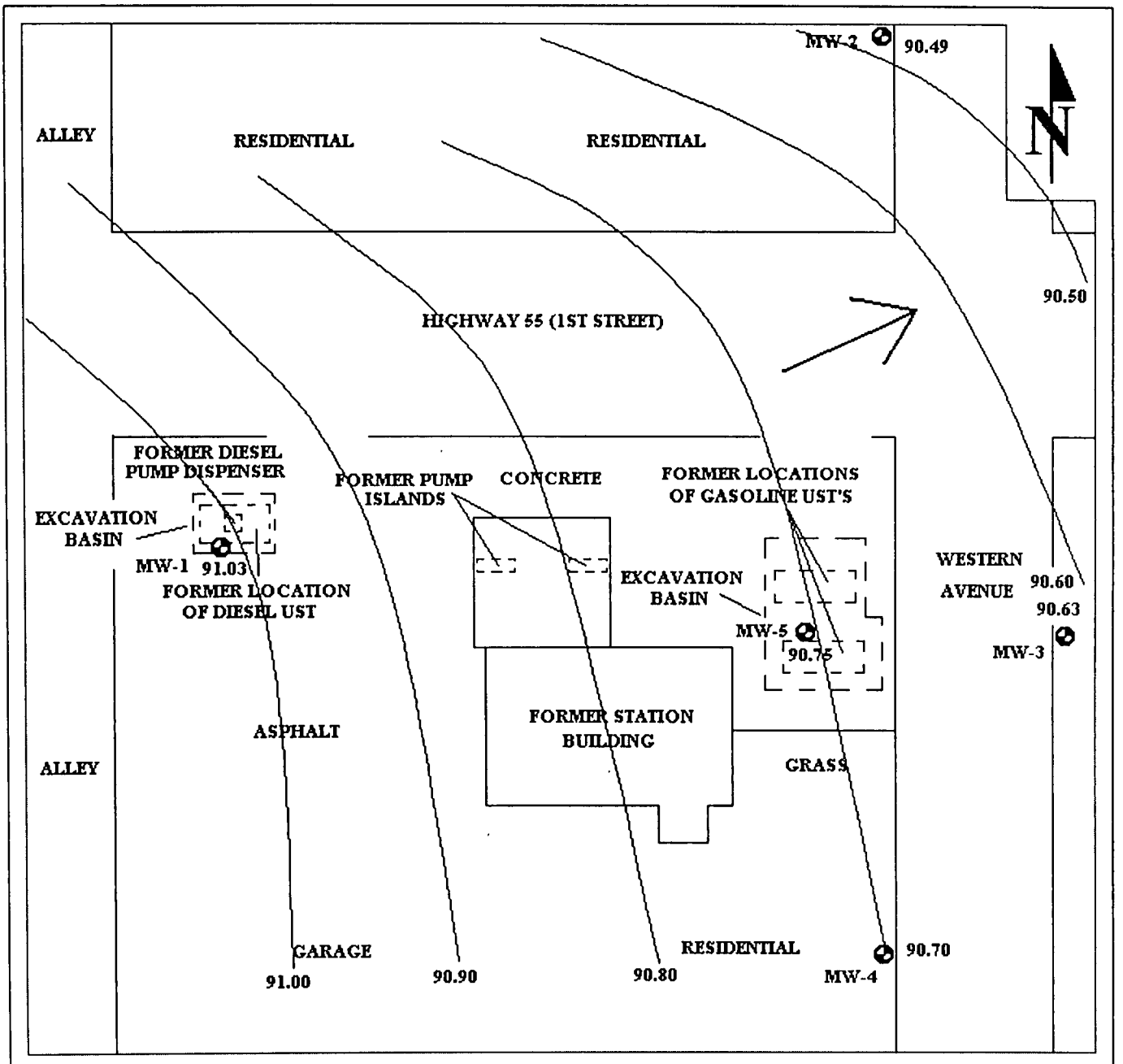
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

GROUND WATER TPH CONC.
MAY 1, 2003

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY: | DATE: AUG 03 | FIGURE: 7D



KEY

MW-1	MONITOR WELL LOCATION
MW-1 91.03	GROUND WATER ELEVATION (FEET)
91.00	GROUND WATER ELEVATION CONTOUR (APPROXIMATE)
	GROUND WATER FLOW DIRECTION
UST	UNDERGROUND STORAGE TANK

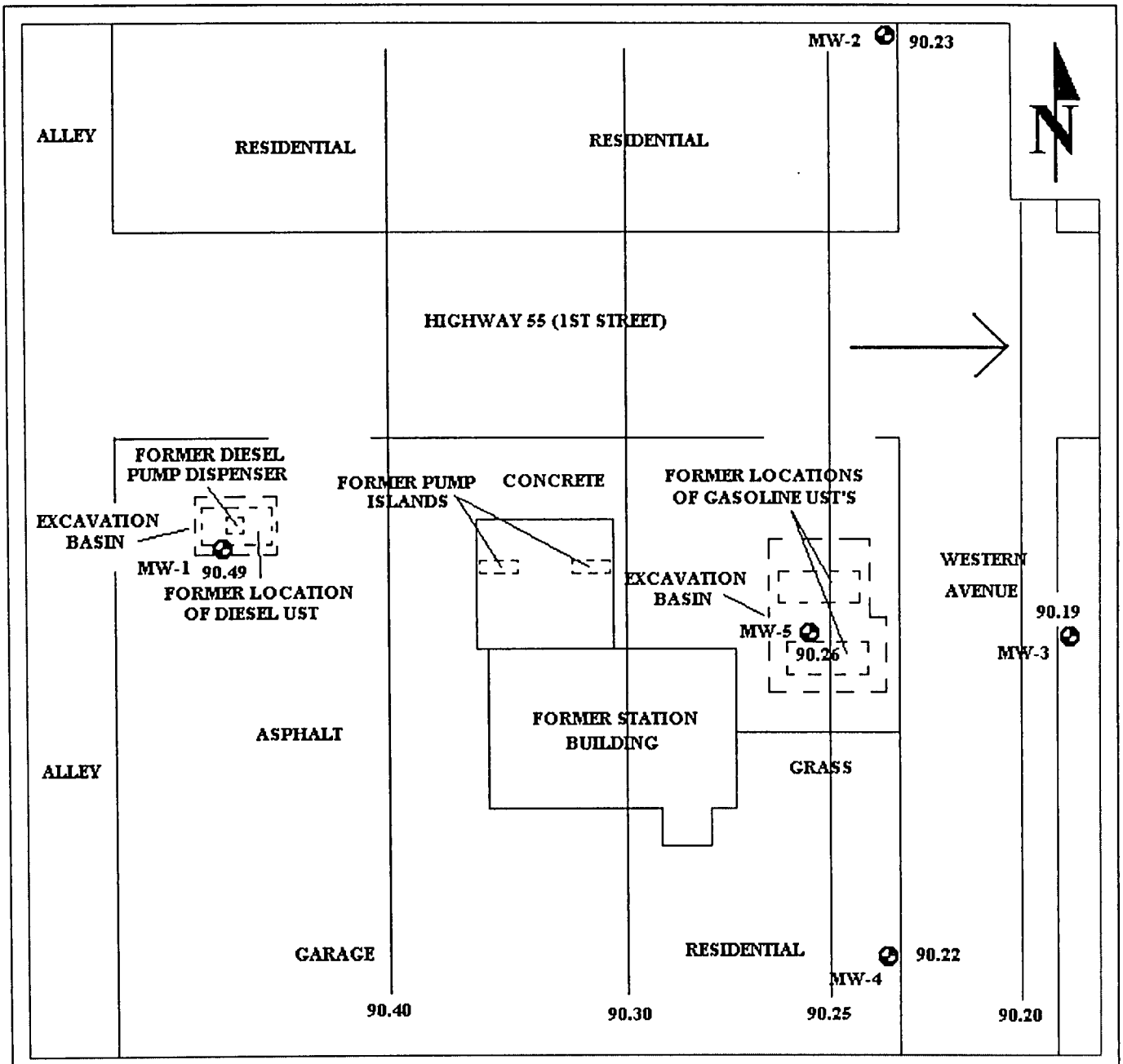
SCALE

0 15 30 FEET

FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

GROUND WATER ELEVATIONS
AUGUST 12, 2002

DATE	REVISED	
		COTEAU ENVIRONMENTAL 728 JANES CIRCLE DR. SW ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:	DATE: AUG 03	FIGURE: 8A



KEY

MW-1	MONITOR WELL LOCATION
MW-1 90.49	GROUND WATER ELEVATION (FEET)
90.30	GROUND WATER ELEVATION CONTOUR (APPROXIMATE)
→	GROUND WATER FLOW DIRECTION
UST	UNDERGROUND STORAGE TANK

SCALE

0 15 30 FEET

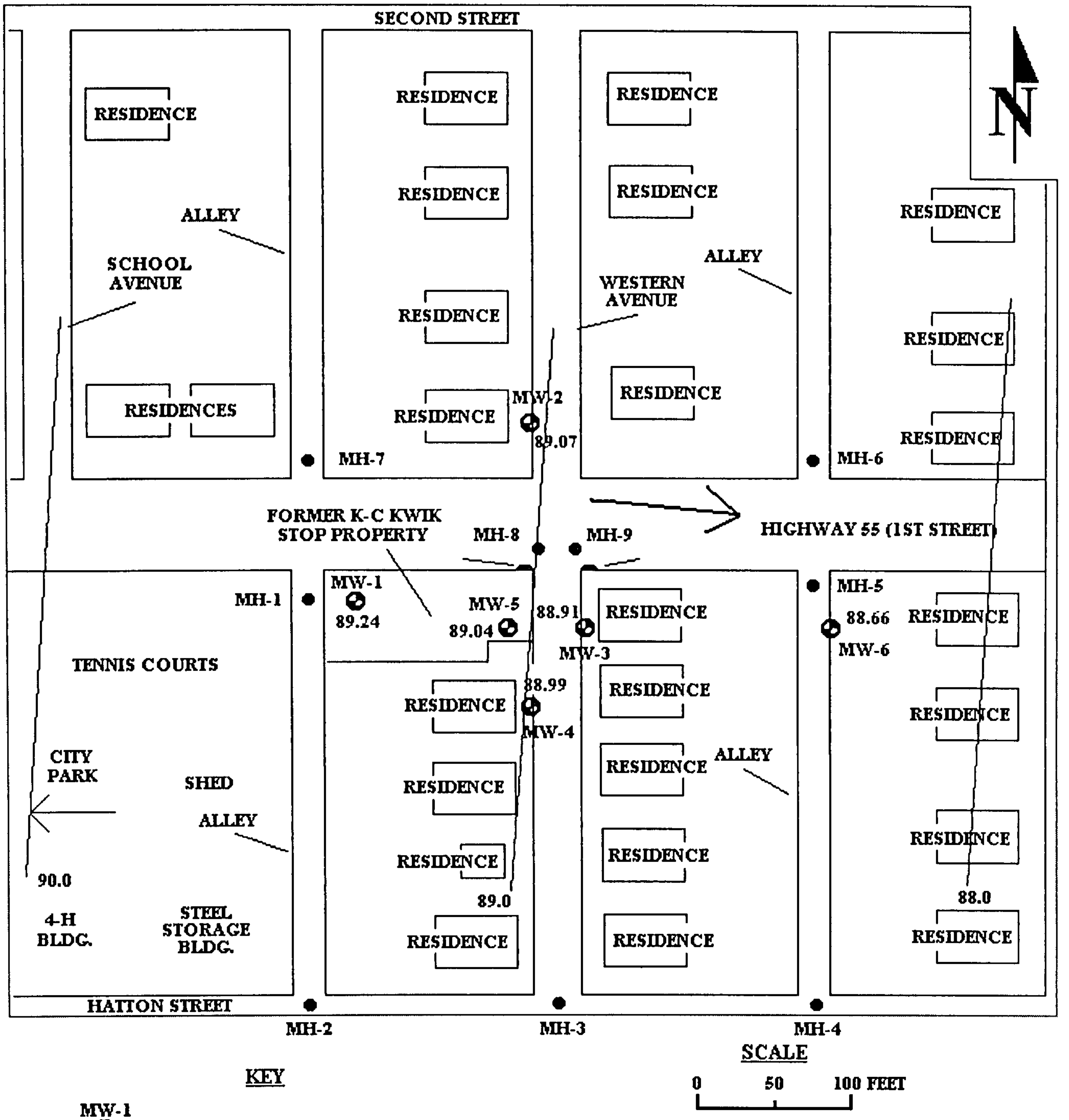
FORMER K-C KWIK STOP BROOTEN, MINNESOTA

GROUND WATER ELEVATIONS NOVEMBER 6, 2002

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY: | DATE: AUG 03 | FIGURE: 8B



KEY

MW-1 (symbol)	MONITOR WELL LOCATION
MW-1 (symbol) 89.24	GROUND WATER ELEVATION (FEET)
—89.0—	GROUND WATER ELEVATION CONTOUR (APPROXIMATE)
→	GROUND WATER FLOW DIRECTION
MH-2 ●	MANHOLE LOCATION

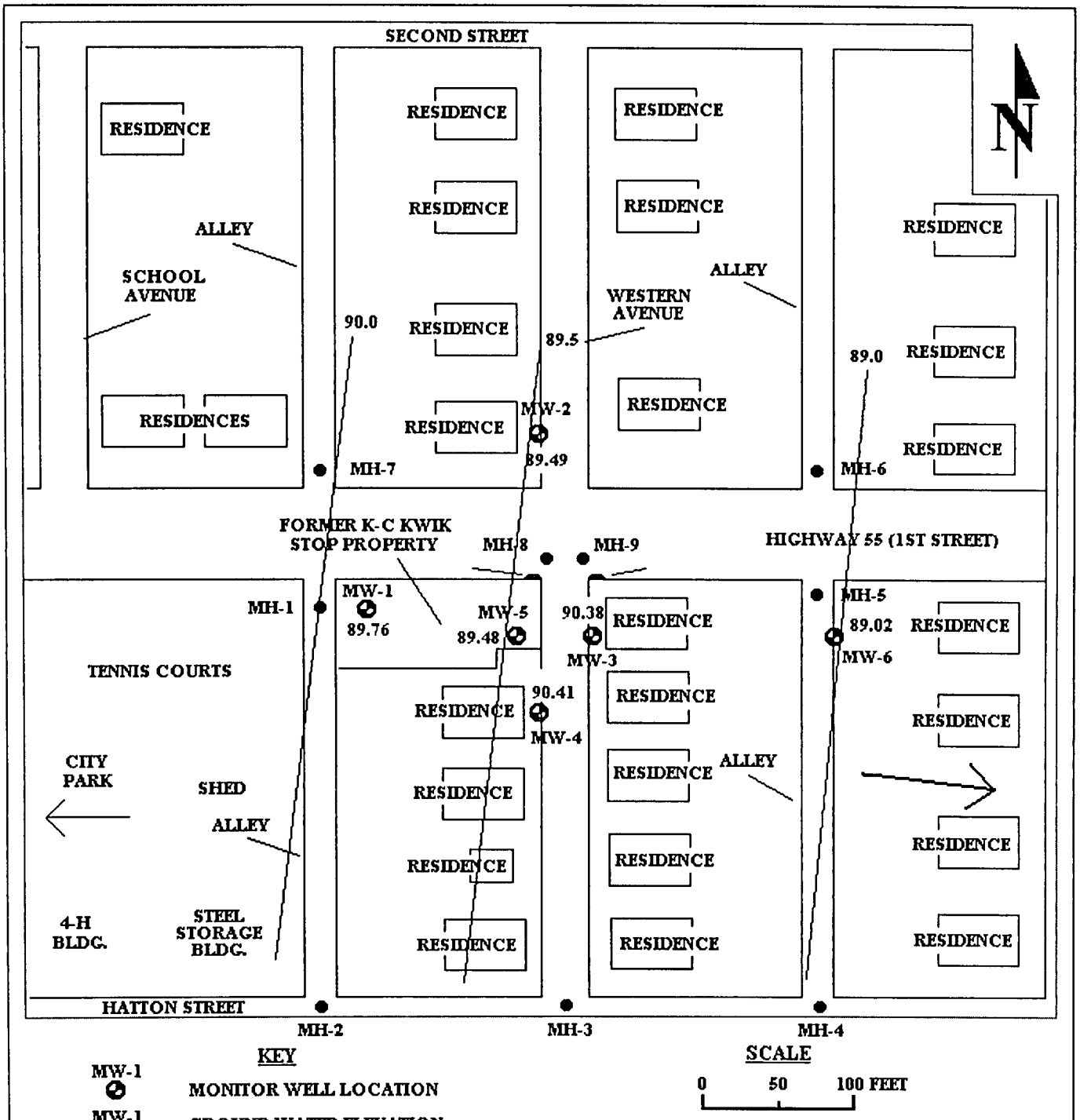
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

GROUND WATER ELEVATIONS
FEBRUARY 27, 2003

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY: | DATE: AUG 03 | FIGURE:8C



KEY

MW-1 — MONITOR WELL LOCATION

MW-1 / 89.76 — GROUND WATER ELEVATION (FEET)

—<1,000— GROUND WATER ELEVATION CONTOUR (APPROXIMATE)

GROUND WATER FLOW DIRECTION

MH-2 — MANHOLE LOCATION

NOTE: GROUND WATER ELEVATIONS IN MONITOR WELLS MW-4 AND MW-5 APPEAR TO BE ANOMALOUS AND WERE NOT USED TO CALCULATE GROUND WATER FLOW DIRECTION.

SCALE

0 50 100 FEET

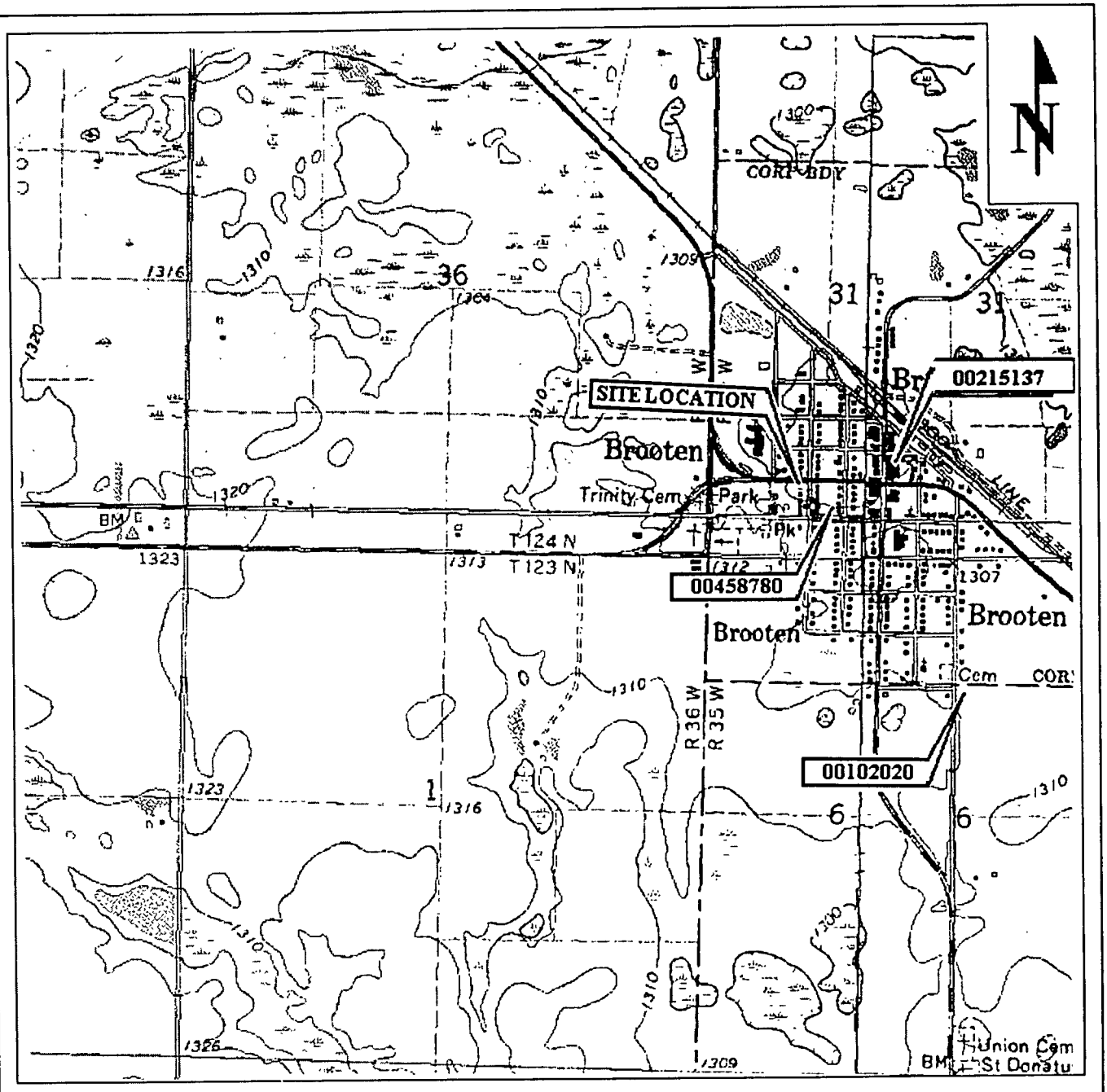
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

GROUND WATER ELEVATIONS
MAY 1, 2003

DATE	REVISED

COTEAU ENVIRONMENTAL
3930 SUNNYBROOK DR. NW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY: | DATE: AUG 03 | FIGURE: 8D



SCALE

0 0.5 MILES

TOPOGRAPHIC MAP
COPYRIGHT TOPOZONE.COM

FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

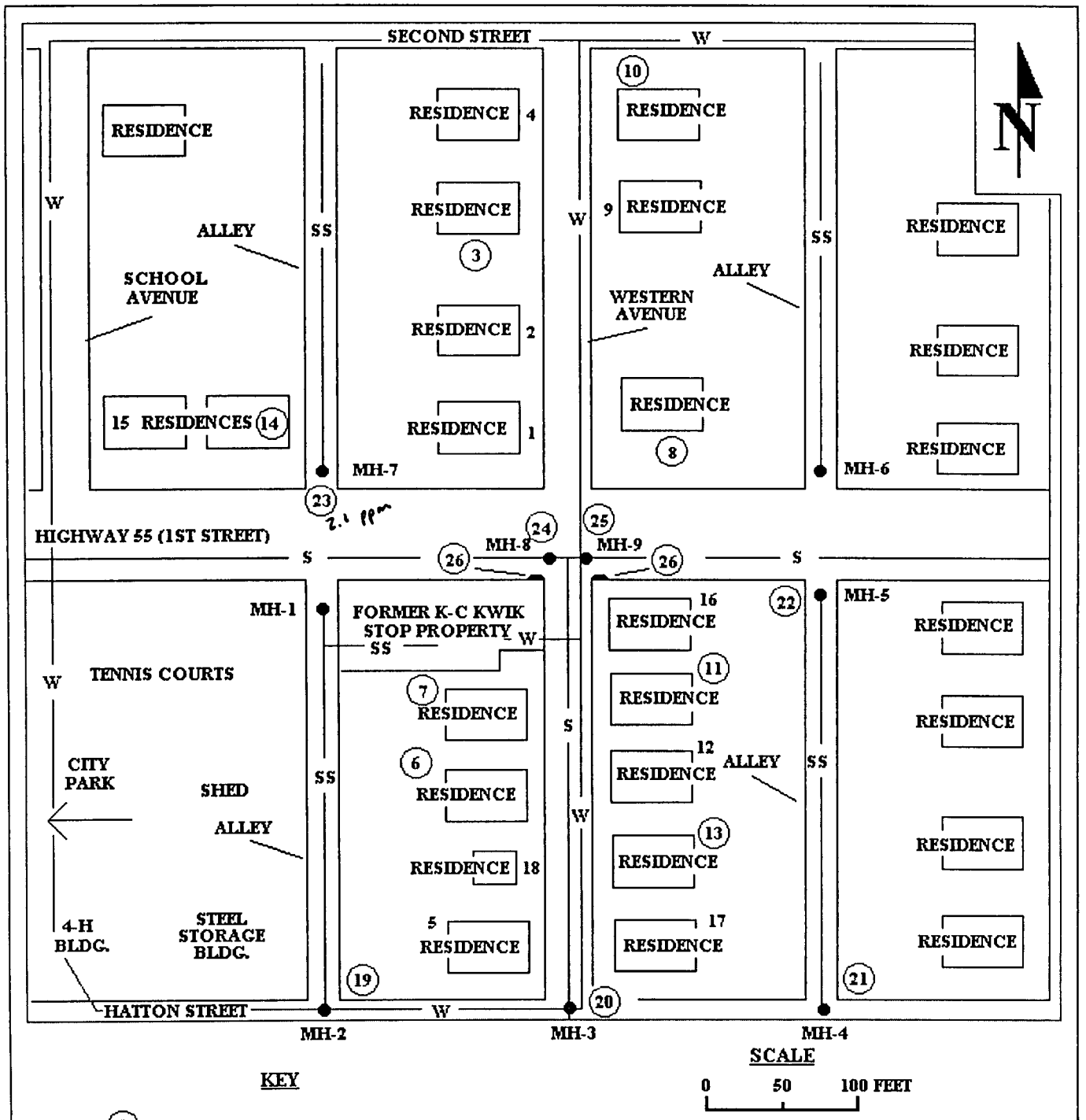
WELL RECEPTOR SURVEY MAP

DATE	REVISED
DRAWN BY:	

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DATE: AUG 03

FIGURE: 9



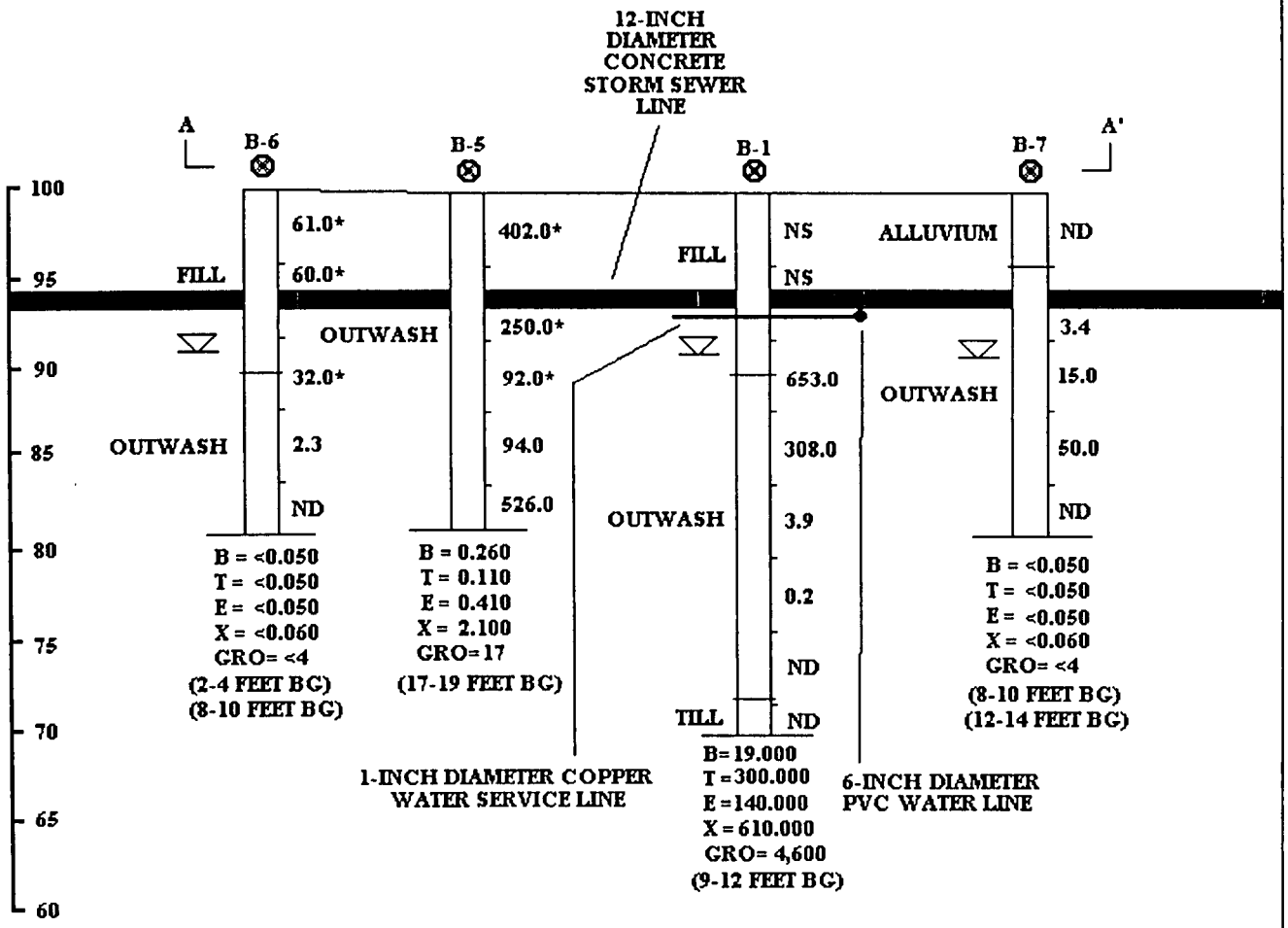
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

VAPOR SURVEY MAP

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

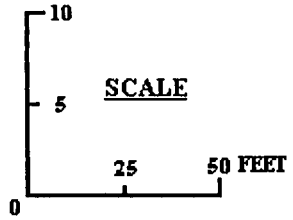
DRAWN BY:	DATE: AUG 03	FIGURE: 10



KEY

WATER TABLE MEASURED IN BORINGS

NOTE: BTEX AND GRO CONCENTRATIONS ARE IN PARTS PER MILLION (PPM)
* PID MALFUNCTION SUSPECTED
ND = NONDETECTABLE
NS = NOT SAMPLED



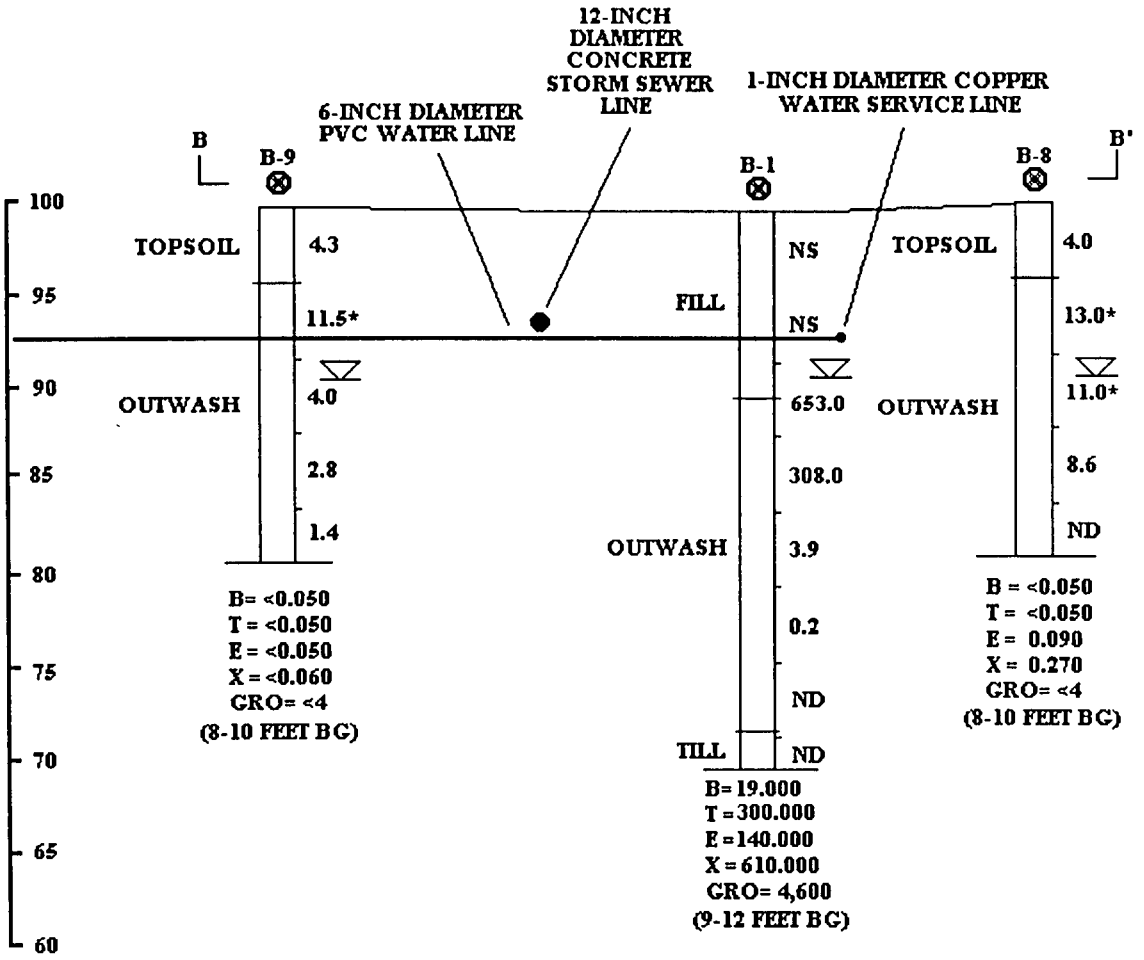
FORMER K-C KWIK STOP BROOTEN, MINNESOTA

GEOLOGIC CROSS-SECTION A-A'

DATE	REVISED

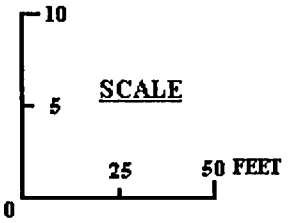
COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 8464668

DRAWN BY:	DATE: AUG 03	FIGURE: 11



KEY

WATER TABLE MEASURED IN BORINGS



NOTE: BTEX AND GRO CONCENTRATIONS ARE IN PARTS PER MILLION (PPM)

* PID MALFUNCTION SUSPECTED
ND = NONDETECTABLE
NS = NOT SAMPLED

FORMER K-C KWIK STOP BROOTEN, MINNESOTA

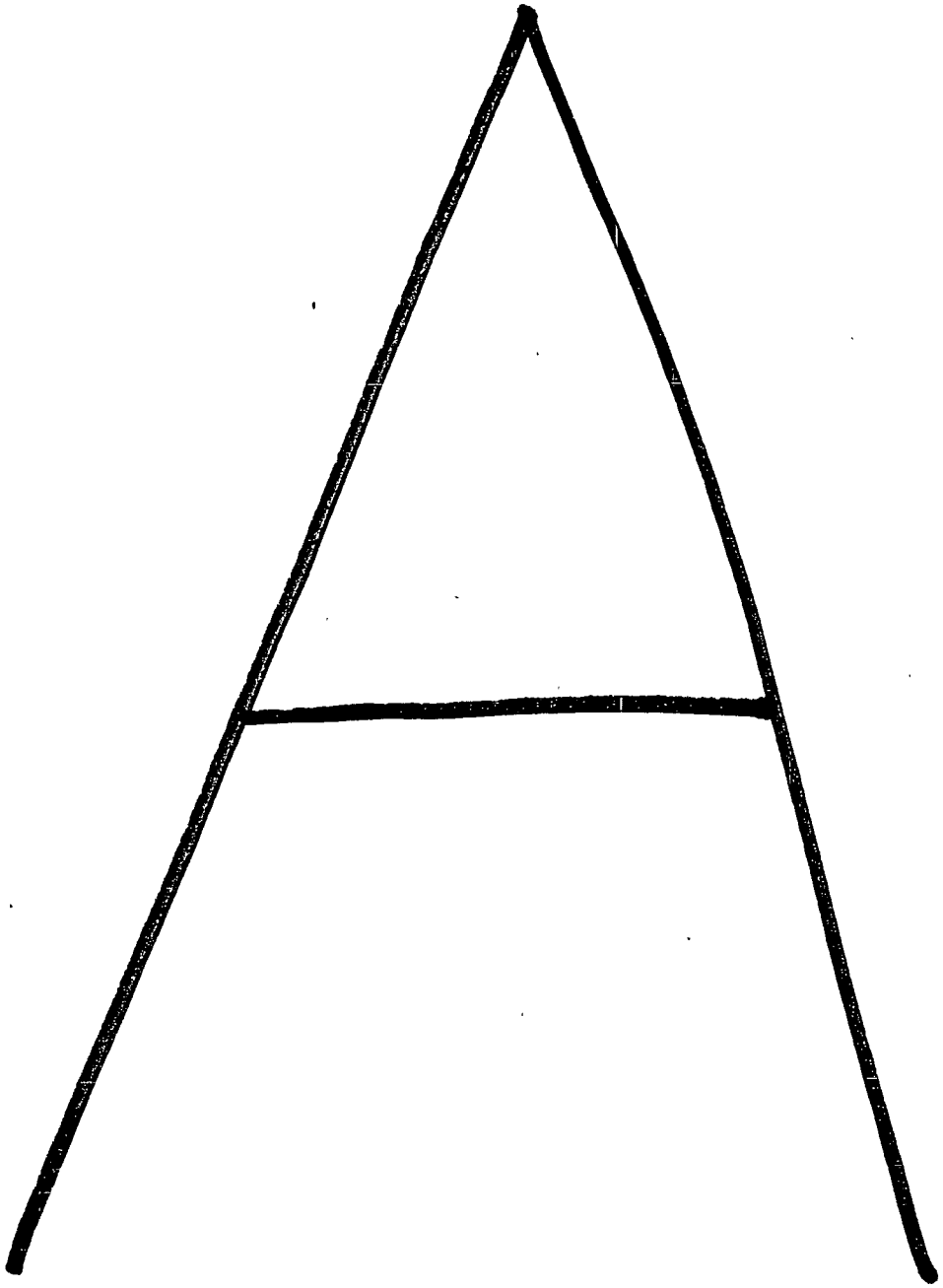
GEOLOGIC CROSS-SECTION B-B'

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 8464668

DRAWN BY: | DATE: AUG 03 | FIGURE: 12

Appendices



APPENDIX A

EXCAVATION REPORT WORKSHEET

Leaking Petroleum Storage Tanks
Minnesota Pollution Control Agency
http://www.pca.state.mn.us/programs/lust_p.html

EXCAVATION REPORT WORKSHEET FOR PETROLEUM RELEASE SITES

Fact Sheet #3.7

Complete the information below to document excavation and treatment of petroleum contaminated soil. Conduct excavations in accordance with fact sheet #3.6 *Excavation of Petroleum Contaminated Soil During Tank Removal.* Please attach any available preliminary site investigation reports to this excavation report, and attach additional pages if necessary. Please type or print clearly. Do not revise or delete text or questions from this report form.

The excavation worksheet deadline is 10 months from the date of receipt of the MPCA "Petroleum Storage Tank Release Investigation and Corrective Action" letter. MPCA staff may establish a shorter deadline for high priority sites.

PART I: BACKGROUND

A. Site: Former K-C Kwik Stop
MPCA Site ID#: LEAK00014698

Street: 230 1st Street
City, Zip: Brooten, Minnesota 56316
County: Stearns
Latitude 45° 30' 03"N Longitude 95° 07' 39"W
Circle one: UTM / State 15 333791E, 5040564N

B. Tank Owner/Operator:
North American State Bank
Mailing Address: P.O. Box 189

Street/Box: 321 Washburn Ave.
City, Zip: Belgrade, MN 56312
Telephone: (320) 254-8271

C. Excavating Contractor:
Rollie's Sales and Service
Contact: Marvin Rollie
Telephone: (320) 859-4811
Tank Contractor Certification Number: 1371

D. Consultant: Coteau Environmental

Contact: Nathan Hunke
Street/Box: 3930 Sunnybrook Drive NW
City, Zip: Alexandria, MN 56308
Telephone: (320) 846-4668

E. Others on-site during site work (e.g., fire marshal, local officials, MPCA staff, etc.): None

Note: If person other than tank owner and/or operator is conducting the cleanup, provide name, address, and relationship to site on a separate attached sheet.

PART II: DATES

A. Date release reported to MPCA: April 17, 2002

B. Dates site work performed (tanks removed, piping removed, soil excavation, soil borings, etc.):

Work Performed	Date
UST system removal	April 17, 2002

PART III: SITE AND RELEASE INFORMATION

A. Describe the land use and pertinent geographic features within 1,000 feet of the site. (i.e. residential property, industrial, wetlands, etc.)

Residential and commercial properties are located within 1,000 feet of the site.

B. Provide the following information for <u>all</u> tanks removed and any remaining at the site:

Table 1.

Tank #	UST or AST	Capacity (gallons)	Contents (product type)	Year installed	Status*	Condition of Tank
1	UST	4,000	Diesel Fuel	1986	Removed 4-17-02	Good
2	UST	6,000	Gasoline	1986	Removed 4-17-02	Fair; Some pitting
3	UST	6,000	Gasoline	1986	Removed 4-17-02	Fair

*Indicate: *removed (date), abandoned in place (date), or currently used*

Notes:

C. Describe the location and status of the other components of the tank system(s), (i.e., piping and dispensers) for those tanks listed above.

The pump dispensers formerly located at the site were removed on April 17, 2002. The pump dispensers were removed prior to Coteau personnel arriving at the site. Reportedly, the pump dispensers were in good condition at the time of removal.

D. Identify and describe the source or suspected source(s) of the release and how the release was discovered.

The suspected source(s) of the release is/are the former gasoline AST(s) at the site.

E. What was the volume of the release? (if known): Unknown gallons

F. When did the release occur? (if known): Unknown

G. Describe source of on-site drinking water. Municipal water is available at the site.

PART IV: EXCAVATION INFORMATION

A. Dimensions of UST excavation(s): Length 16' Width 12' Depth 9'
Length 20' Width 16' Depth 10'
Length 23' Width 15' Depth 10'

B. Original tank backfill material (sand, gravel, etc.): Sand, silt

C. Native soil type (clay, sand, etc.): Sand, silt, clay

D. Quantity of contaminated soil removed for treatment (cubic yards): None

---

[**Note**: If the volume removed is more than allowed in Fact Sheet 3.6 *Excavation of Petroleum Contaminated Soil During Tank Removal*, please document MPCA staff approval.]

E. Were new tanks and/or piping and dispensers installed? ☐yes X no) If yes, what volume of contaminated soil was excavated to accommodate the installation of the new tanks and piping?

F. If contaminated soil was removed to accommodate the installation of new tanks and/or piping, show your calculations for the amount of soil removal allowed using Table 6.2 in Fact Sheet 3.6 *Excavation of Petroleum Contaminated Soil During Tank Removal.*
N/A

G. Was ground water encountered or a suspected perched water layer or was there evidence of a seasonally high ground water table (i.e. mottling)? X yes ☐no) At what depth? Approximately nine (9) feet below grade.

H. If ground water was not encountered during the excavation, what is the expected depth of ground water? N/A

I. Additional investigation is necessary at sites that have visual or other evidence of contamination remaining in the suspected source area, with sandy or silty sand soil [Unified Soil Classification System/American Society for Testing Materials] and where the water table is within 25 feet of the ground surface. See fact sheet #3.6 *Excavation of Petroleum Contaminated Soil*, Part VI Additional Investigation. If a soil boring is necessary, describe the soil screening and analytical results. Attach the boring logs and laboratory results to this report.

J. If no soil boring was performed, explain.
Soil borings will be completed during Limited Site Investigation (LSI) activities at the site.

K. If ground water was encountered or if a soil boring was conducted, was there evidence of ground water contamination? (yes/no) Describe this evidence of contamination, e.g., free product (specify thickness), product sheen, ground water in contact with petroleum contaminated soil, water analytical results, etc. **Note**: If you observe free product, contact MPCA staff immediately, as outlined in fact sheet 3.3 *Free Product: Evaluation and Recovery.*

A petroleum product sheen was observed on ground water which seeped into the UST excavation where the gasoline UST's were formerly located. A ground water sample was collected for laboratory analysis during excavation activities on April 17, 2002. Laboratory analysis of the ground water sample identified petroleum impacts in the form of benzene, toluene, ethyl benzene and xylenes (BTEX) and total petroleum hydrocarbons (TPH) using Gasoline Range Organics (GRO) methodology.

L. Was bedrock encountered in the excavation? ☐ yes X no At what depth?

M. Were other unique conditions associated with this site? ☐yes X no) If so, explain.

PART V: SAMPLING INFORMATION

A. Briefly describe the field screening methods used to distinguish contaminated from uncontaminated soil:

A photoionization detector (PID) was utilized to screen soil samples from the excavation areas for organic vapors. In addition, petroleum odor and visible staining were used to identify petroleum-impacted soil.

B. List soil vapor headspace analysis results collected during excavation of tanks, lines and dispensers. Indicate all sampling locations using sample codes (with sampling depths in parentheses), e.g. R-1 (2 feet), R-2 (10 feet), etc. "R" stands for "removed." Samples collected at different depths at the same location should be labeled R-1A (2 feet), R-1B (4 feet), R-1C (6 feet), etc. Similarly, if the sample was collected from the sidewall or bottom after excavation was complete, label it S-1 (for sidewall) or B-1 (for "bottom"). Indicate the depth of sample collection. Be sure the sample codes correspond with the site map in part VI, below.

Sample Code	Soil Type	Reading ppm	Sample Code	Soil Type	Reading ppm
S-1(3-4')	Sand	3.8	S-6(5-6')	Silt/Sand	789.0
S-2(3-4')	Sand	6.4	B-3(9-10')	Sand	110.0
S-3(3-4')	Sand	10.0	B-4(9-10')	Sand	264.0
S-4(3-4')	Sand	5.4	S-7(10-11')	Sand	795.0
B-1(8-9')	Sand	0.1	S-8(5-6')	Silt/Sand	122.0
B-2(8-9')	Sand	2.0	B-5(2-3')	Silt/Sand	0.6
S-5(0-2')	Silt/Sand	511.0	B-6(2-3')	Silt/Sand	1.3

C. Was the "removed soil" placed back into the excavation basin? X yes ☐ no
If no, please complete Part VIII: Soil Treatment Information section. If yes, a Limited Site Investigation is necessary (see fact sheet 3.19, *Soil and Ground Water Investigations Performed During Remedial Investigations*).

D. Briefly describe the soil analytical sampling and handling procedures used:

Soil samples collected from beneath the gasoline UST's and gasoline pump dispensers were laboratory analyzed for benzene, toluene, ethyl benzene and xylenes (BTEX), methyl tertiary butyl ether (MTBE) and total petroleum hydrocarbons (TPH) using Gasoline Range Organics (GRO) methodology. The soil samples collected from beneath the diesel fuel UST and the diesel fuel pump dispensers were laboratory analyzed for BTEX and TPH as Diesel Range Organics (DRO). The soil samples were transferred into clean laboratory containers and preserved in the field and during transportation to the laboratory. The samples, accompanied by a chain-of-custody, were submitted to Northeast Technical Services, Inc. of Virginia, Minnesota for laboratory analysis.

E. List below all soil sample analytical results from bottom and side wall samples collected after excavation of tanks, lines and dispensers (i.e., soils left in place when excavation is complete). Code the samples with sampling depths in parentheses as follows: sidewall samples S-1 (8 feet), S-2 (4 feet), etc.; bottom samples B-1 (13 feet), B-2 (14 feet), stockpile samples SP-1, etc. Be sure the sample codes correspond to the site map required in part VI. Do not include analyses from the stockpiled soil.

Sample Code	GRO/ DRO	Benzene mg/kg	Ethyl-benzene mg/kg	Toluene mg/kg	Xylene mg/kg	MTBE mg/kg	Lead mg/kg
B-1(8-9')	NA/<10	<0.050	<0.050	<0.050	<0.060	NA	NA
B-2(8-9')	NA/<10	<0.050	<0.050	<0.050	<0.060	NA	NA
S-1(10-11')	16,000/NA	17.000	340.000	880.000	1,400.000	200.000	NA
B-3(9-10')	<4/NA	<0.050	<0.050	<0.050	<0.060	<0.050	NA
B-4(9-10')	140/NA	2.600	4.600	15.000	21.000	0.960	NA
B-5(2-3')	5.4/NA	<0.050	<0.050	0.230	<0.060	<0.050	NA
B-6(2-3')	11/NA	<0.050	<0.050	<0.050	<0.060	<0.050	NA

Note: Attach copies of laboratory reports and chain of custody forms.

PART VI: FIGURES

Attach the following figures to this report:

1. Site location map.
2. Site map(s) drawn to scale illustrating the following:
   a. Location (or former location) of all present and former tanks, piping, and dispensers;
   b. Location of other structures (buildings, canopies, etc.);
   c. Adjacent city, township, or county roadways;
   d. Final extent and depth of excavation;
   e. Location of soil screening samples (e.g. R-1), soil analytical samples (e.g., S-1 or B-1), and any soil borings (e.g., SB-1). Also, attach all boring logs.
   f. North arrow, bar scale and map legend.
   g. Provide location of any on-site water wells. If on-site water wells exist, please provide well logs and/or construction diagrams.
   h. Locations of new tanks, piping and dispensers, if installed.

PART VII: SUMMARY

Briefly summarize evidence indicating whether additional investigation is necessary at the site, as discussed in parts VI and VII of fact sheet 3.6 *Excavation of Petroleum Contaminated Soil During Tank Removal.* If no further action is necessary, the MPCA staff will review this report following notification of soil treatment.

Based on field screening of soil samples collected during excavation activities at the site on April 17, 2002, petroleum impacts are present. In addition, laboratory analysis identified petroleum impacts in the ground water sample collected from the excavation basin beneath the former gasoline UST's located at the site. Petroleum impacted soil is in contact with ground water at the site. Therefore, Coteau recommends that a Limited Site Investigation (LSI) br completed at the site.

PART VIII: SOIL TREATMENT INFORMATION

A. Soil treatment method used (thermal, land application, composting, other). If you choose "other" specify treatment method: N/A

B. Location of treatment site/facility: N/A

C. Date MPCA approved soil treatment (if thermal treatment was used after May 1, 1991, indicate date that the MPCA permitted thermal treatment facility agreed to accept soil):

D. Identify the location of stockpiled contaminated soil: N/A

PART IX: CONSULTANT (OR OTHER) PREPARING THIS REPORT

By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leak site. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in reduction of reimbursement awards. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leak site that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. § 115.075 (1994) or Minn. 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.

Name and Title: Andrew M. Schmidt, EIT, Environmental Engineer

Signature: Andrew M. Schmidt

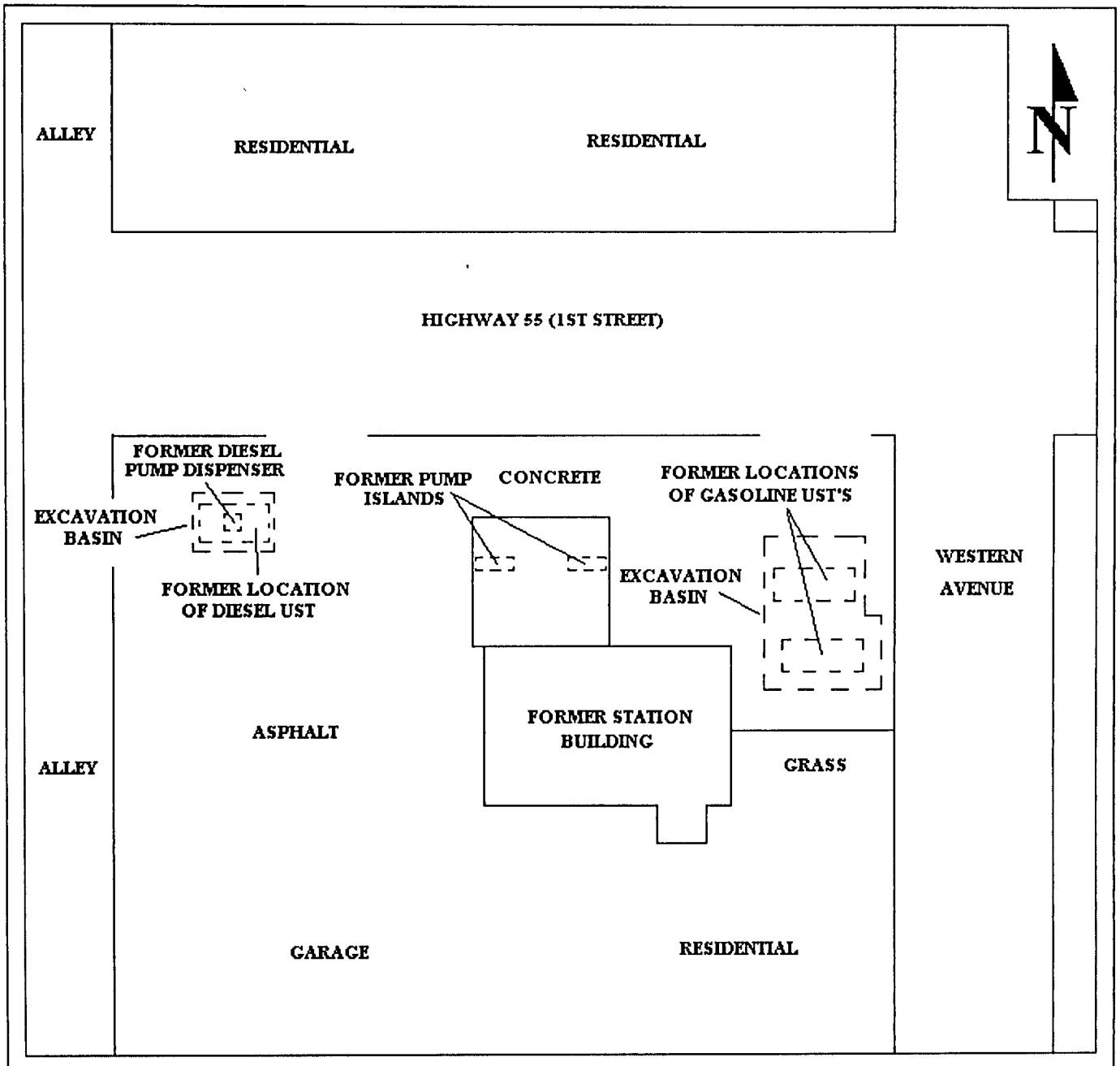
Date signed: 8-19-03

Company and mailing address: Coteau Environmental
728 Janes Circle Drive SW
Alexandria, Minnesota 56308

Telephone: (320) 846-4668 Fax: (320) 846-4668

If additional investigation is not necessary, please mail this form and all necessary attachments to the MPCA project manager. If additional investigation is necessary, include this form as an appendix to Fact Sheet 3.24 *Investigation Report Form*. **MPCA staff will not review excavation reports indicating a limited site investigation is necessary unless the limited site investigation has been completed.**

Web pages and phone numbers	
MPCA staff	http://data.pca.state.mn.us/pca/emplsearch.html
MPCA toll free	1-800-657-3864
LUST web page	http://www.pca.state.mn.us/programs/lust_p.html
MPCA Infor. Request	http://www.pca.state.mn.us/about/inforequest.html
MPCA VPIC program	http://www.pca.state.mn.us/programs/vpic_p.html
PetroFund Web Page	http://www.commerce.state.mn.us/mainpf.htm
PetroFund Phone	651-297-1119, or 1-800-638-0418
State Duty Officer	**651-649-5451 or 1-800-422-0798**



KEY

UST — UNDERGROUND STORAGE TANK

SCALE

0 15 30 FEET

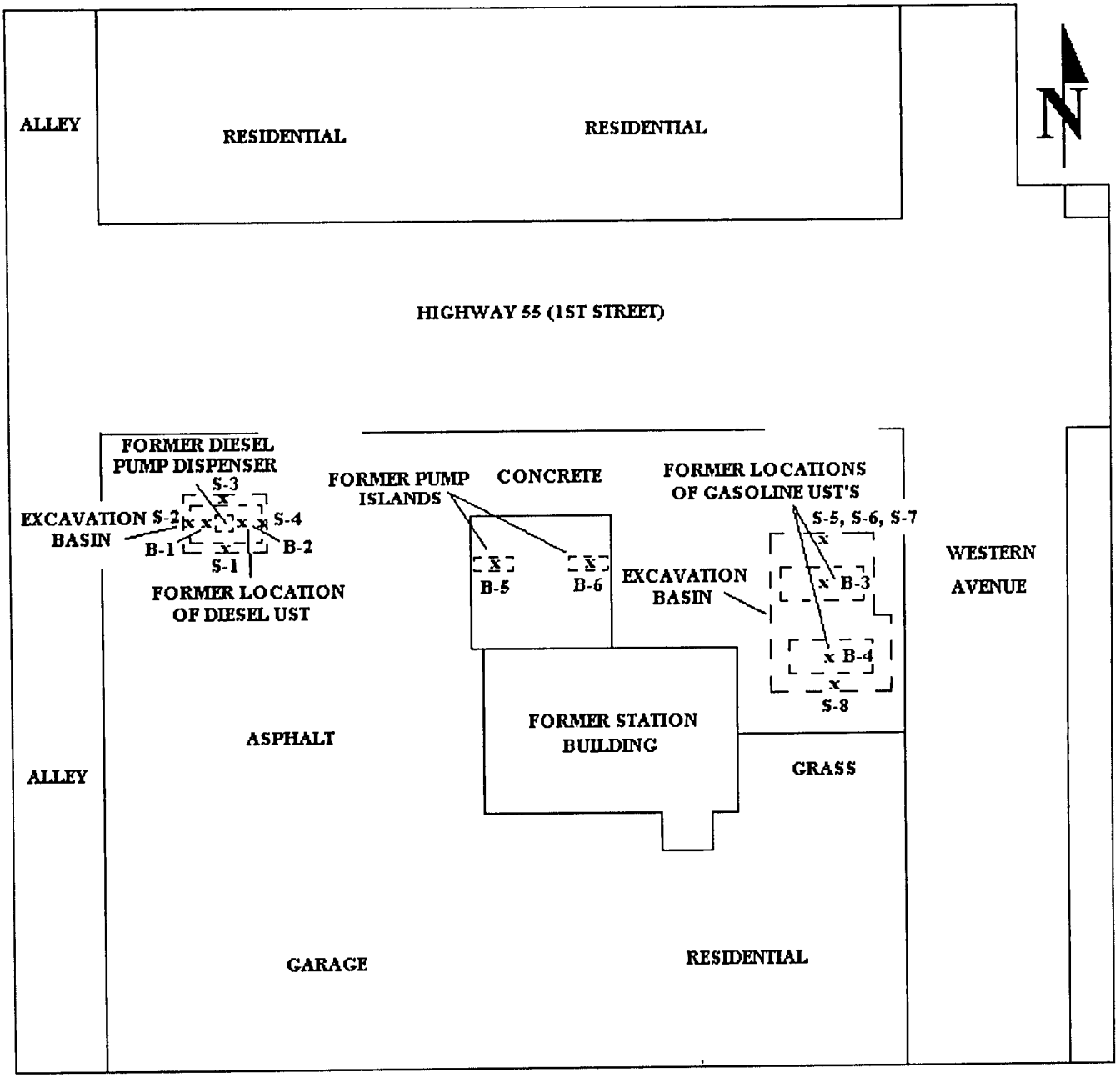
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

SITE MAP

DATE	REVISED

COTEAU ENVIRONMENTAL
3930 SUNNYBROOK DR. NW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: DEC 02	FIGURE: 2



SCALE

0 15 30 FEET

KEY

B-1 x	BOTTOM PID SAMPLE LOCATION
S-1 x	SIDEWALL PID SAMPLE LOCATION
PID	PHOTOIONIZATION DETECTOR
UST	UNDERGROUND STORAGE TANK

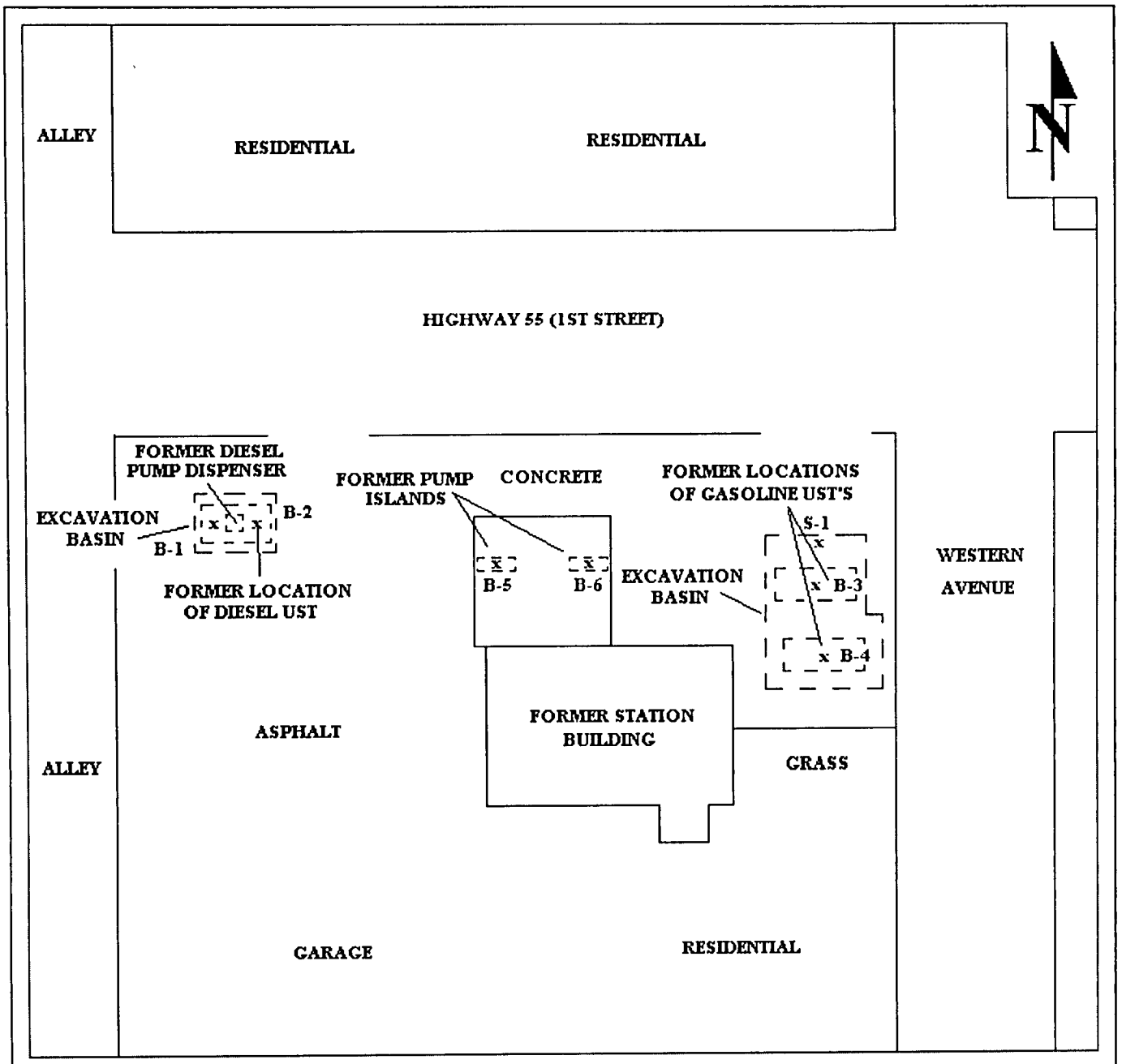
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

PID SAMPLE LOCATIONS

DATE	REVISED

COTEAU ENVIRONMENTAL
3930 SUNNYBROOK DR. NW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: DEC 02	FIGURE: 3



SCALE

0 15 30 FEET

KEY

UST	UNDERGROUND STORAGE TANK
B-1 x	BOTTOM SAMPLE LOCATION
S-1 x	SIDEWALL SAMPLE LOCATION

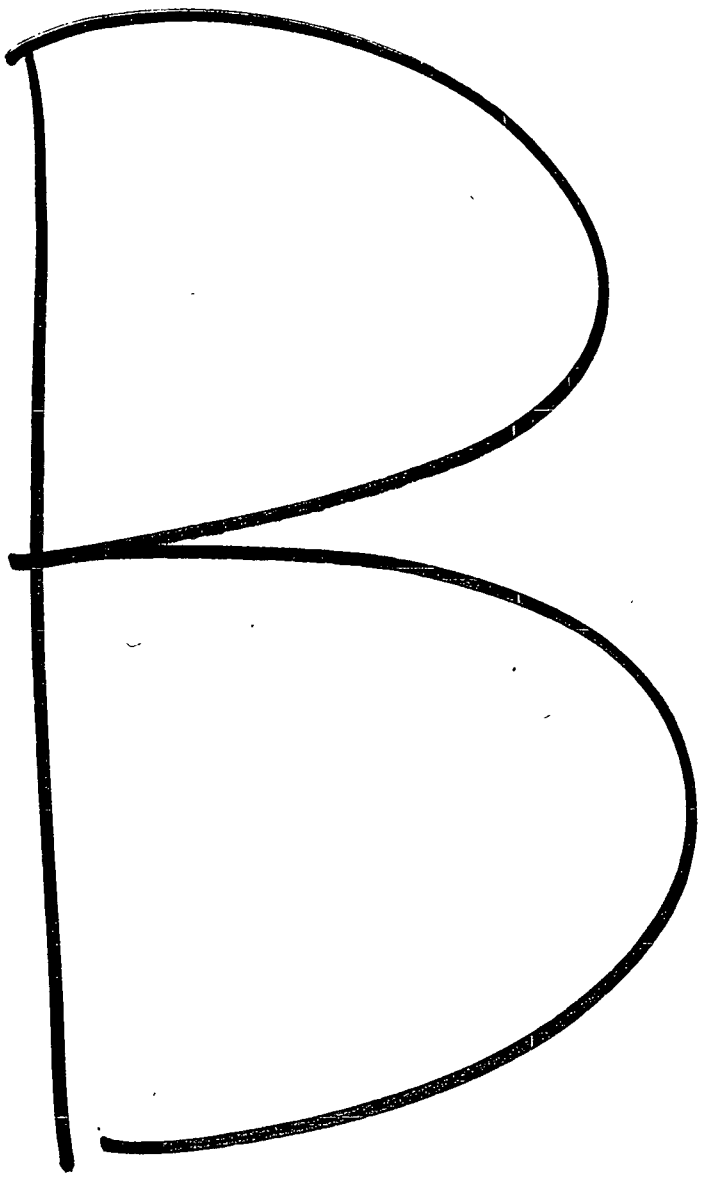
FORMER K-C KWIK STOP BROOTEN, MINNESOTA

SOIL SAMPLE LOCATIONS

DATE	REVISED

COTEAU ENVIRONMENTAL
3930 SUNNYBROOK DR. NW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY: | DATE: DEC 02 | FIGURE: 4



APPENDIX B

LABORATORY ANALYTICAL REPORTS

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021681347	Project #:	5828.05	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 19246	
Descript:	KC Kwik Stop			Sampled: 6/13/2002	
Location:	B-1 (9-12)			Completed: 07/01/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	6/28/2002	4600	mg/Kg	4	WI Method
Benzene, Soil	6/28/2002	19000	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	6/28/2002	140000	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	6/28/2002	94000	ug/Kg	50	SW 846 8021B
Moisture	6/18/2002	18	%	0.1	EPA 160.3
Toluene, Soil	6/28/2002	300000	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	6/28/2002	610000	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021681355	Project #:	5828.05	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 19246	
Descript:	KC Kwik Stop			Sampled: 6/13/2002	
Location:	B-2 (10-12')			Completed: 07/01/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	6/28/2002	4	mg/Kg	4	WI Method
Benzene, Soil	6/28/2002	<50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	6/28/2002	<50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	6/28/2002	<50	ug/Kg	50	SW 846 8021B
Moisture	6/18/2002	13	%	0.1	EPA 160.3
Toluene, Soil	6/28/2002	<50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	6/28/2002	380	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021681356	Project #:	5828.05	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 19246	
Descript:	KC Kwik Stop			Sampled: 6/13/2002	
Location:	B-3 (9-12)			Completed: 07/01/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	6/28/2002	9100	mg/Kg	4	WI Method
Benzene, Soil	6/28/2002	23000	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	6/28/2002	320000	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	6/28/2002	67000	ug/Kg	50	SW 846 8021B
Moisture	6/18/2002	28	%	0.1	EPA 160.3
Toluene, Soil	6/28/2002	660000	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	6/28/2002	2100000	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021681357	Project #:	5828.05	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 19246	
Descript:	KC Kwik Stop			Sampled: 6/13/2002	
Location:	B-3 (15-18)			Completed: 07/05/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	6/30/2002	490	mg/Kg	4	WI Method
Benzene, Soil	6/30/2002	< 1000	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	6/30/2002	13000	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	6/30/2002	8000	ug/Kg	50	SW 846 8021B
Moisture	6/18/2002	14	%	0.1	EPA 160.3
Toluene, Soil	6/30/2002	21000	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	6/30/2002	65000	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S02168135A	Project #:	5828.05	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 19246	
Descript:	KC Kwik Stop			Sampled: 6/13/2002	
Location:	B-4 (9-11)			Completed: 07/01/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	6/28/2002	5900	mg/Kg	4	WI Method
Benzene, Soil	6/28/2002	29000	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	6/28/2002	180000	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	6/28/2002	150000	ug/Kg	50	SW 846 8021B
Moisture	6/18/2002	17	%	0.1	EPA 160.3
Toluene, Soil	6/28/2002	590000	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	6/28/2002	800000	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

Data File D:\HPCHEM\4\DATA\062702\041F4201.D Sample Name: S02168135A Cotea

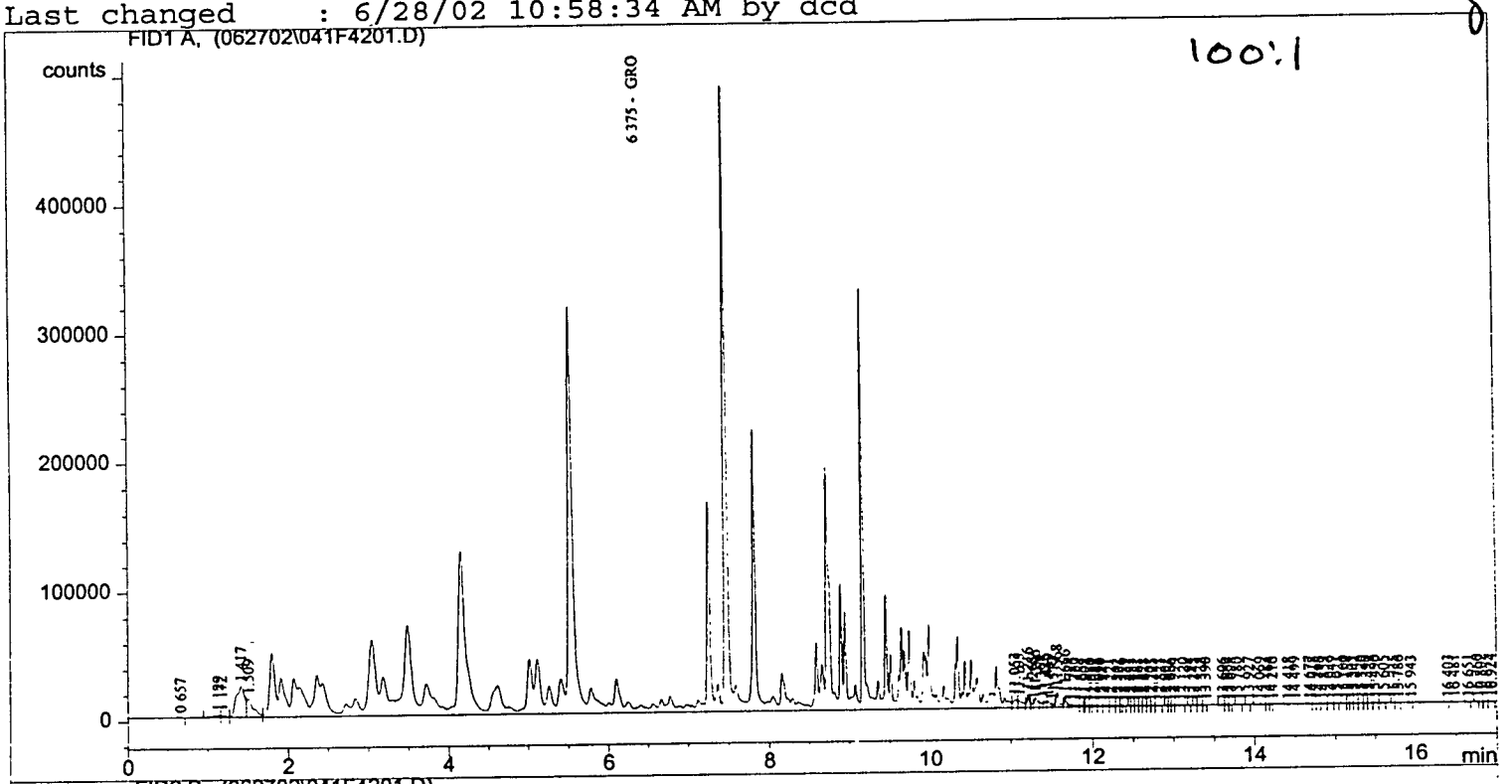
==========

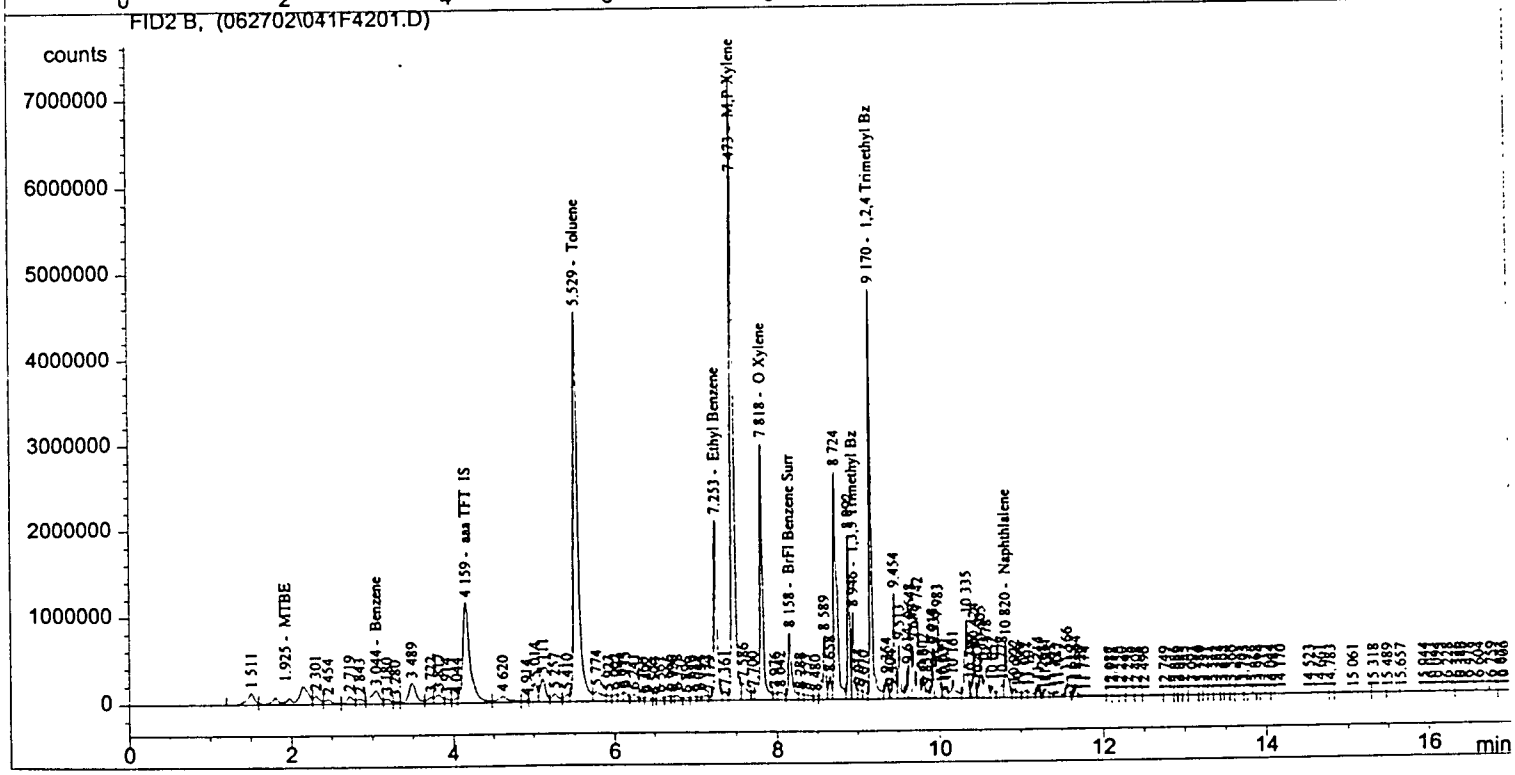
Injection Date : 6/28/02 1:56:25 PM
Sample Name : S02168135A Cotea
Acq. Operator : dcd

Seq. Line : 42
Vial : 41
Inj : 1
Inj Volume : Manually

Acq. Method : C:\HPCHEM\1\METHODS\!GC4ACQ.M
Last changed : 4/25/01 1:43:18 PM by dcd
Analysis Method : D:\HPCHEM\4\METHODS\05242SLB.M
Last changed : 6/28/02 10:58:34 AM by dcd

5 1ml 25ml 25.7g 100:1





Data File D:\HPCHEM\4\DATA\062702\039F4001.D Sample Name: S021681356 Cotea

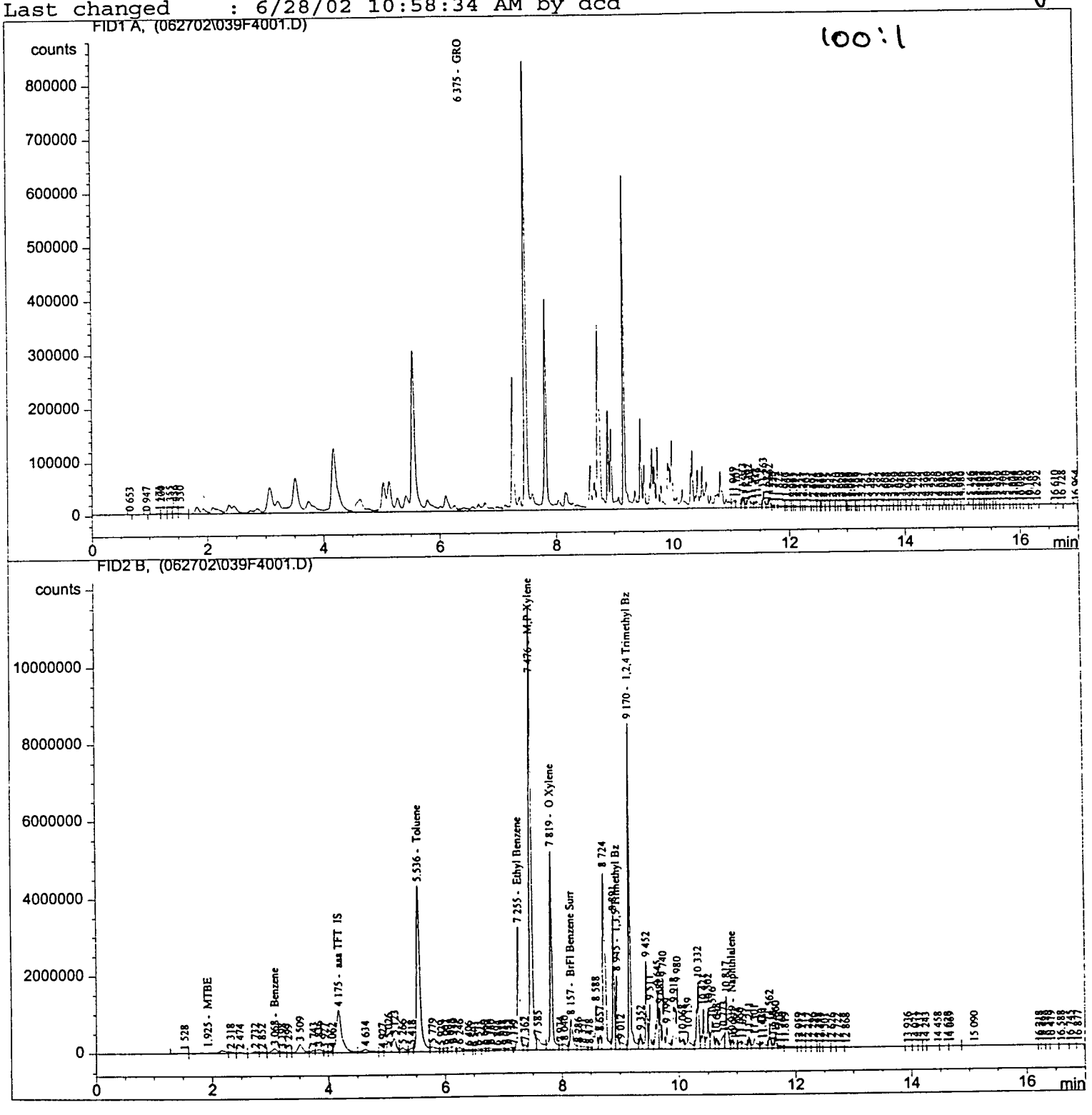
==========

Injection Date : 6/28/02 12:33:06 PM
Sample Name : S021681356 Cotea
Acq. Operator : dcd

Seq. Line : 40
Vial : 39
Inj : 1
Inj Volume : Manually

Acq. Method : C:\HPCHEM\1\METHODS\!GC4ACQ.M
Last changed : 4/25/01 1:43:18 PM by dcd
Analysis Method : D:\HPCHEM\4\METHODS\05242SLB.M
Last changed : 6/28/02 10:58:34 AM by dcd

25ml
5ml 25.9g

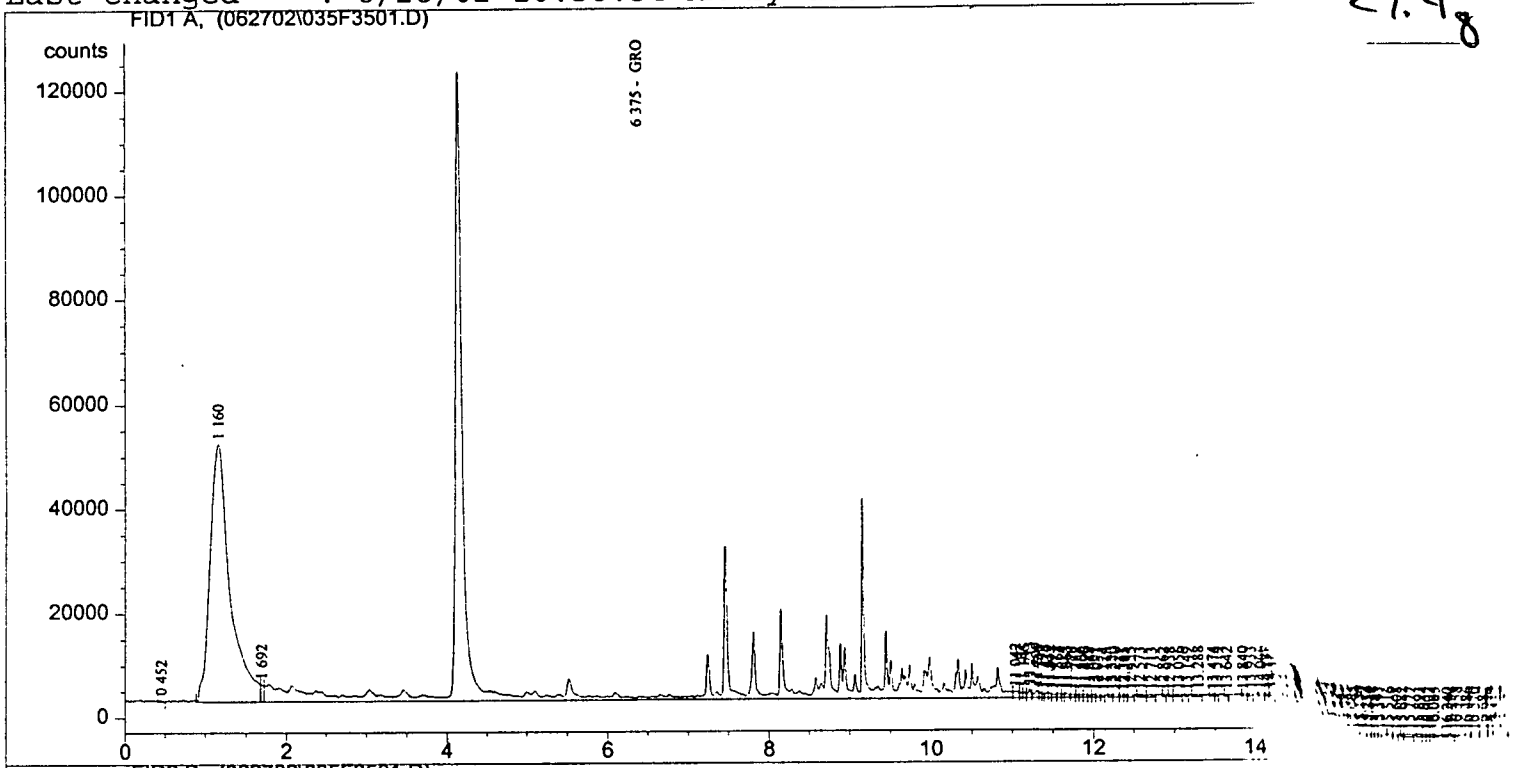


Data File D:\HPCHEM\4\DATA\062702\035F3501.D Sample Name: S0216[redacted]355 Cotea

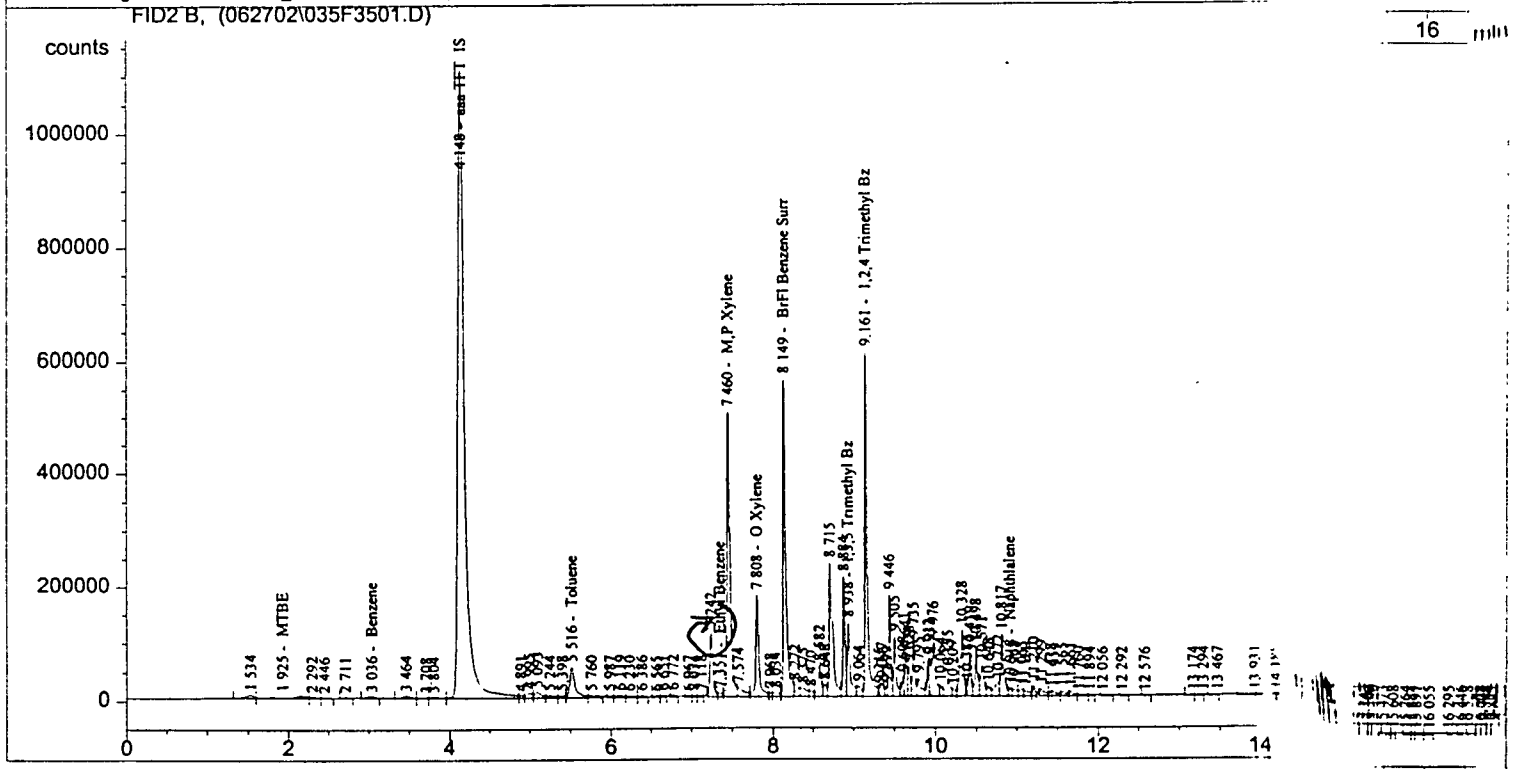
Injection Date : 6/28/02 9:21:40 AM Seq. Line : 35
Sample Name : S021681355 Cotea Vial : 35
Acq. Operator : dcd Inj : 1
Inj Volume : Manu[illegible]ly

Acq. Method : C:\HPCHEM\1\METHODS\!GC4ACQ.M
Last changed : 4/25/01 1:43:18 PM by dcd
Analysis Method : D:\HPCHEM\4\METHODS\05242SLB.M
Last changed : 6/28/02 10:58:34 AM by dcd

$ 100 ml 25 ml 27.4 g



16

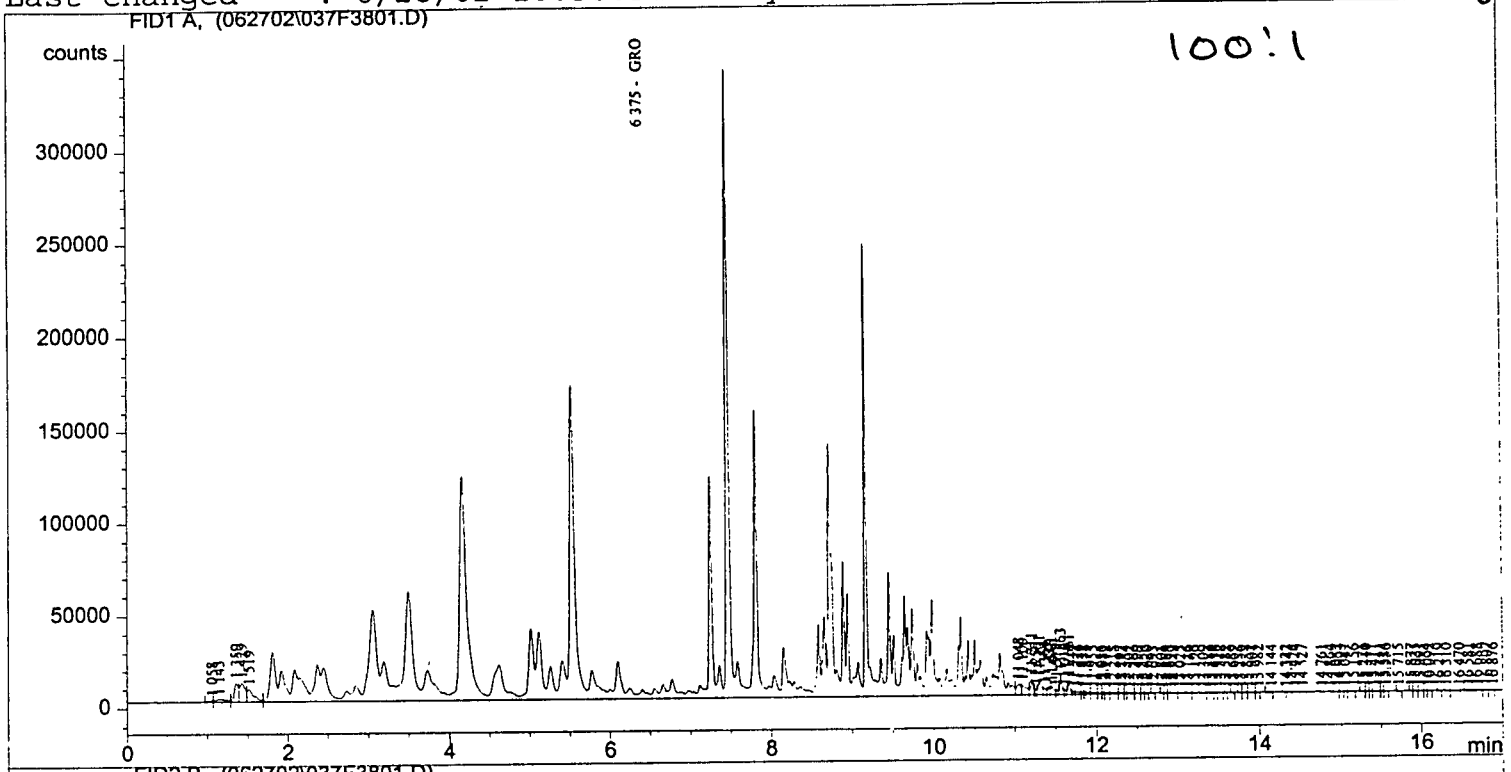


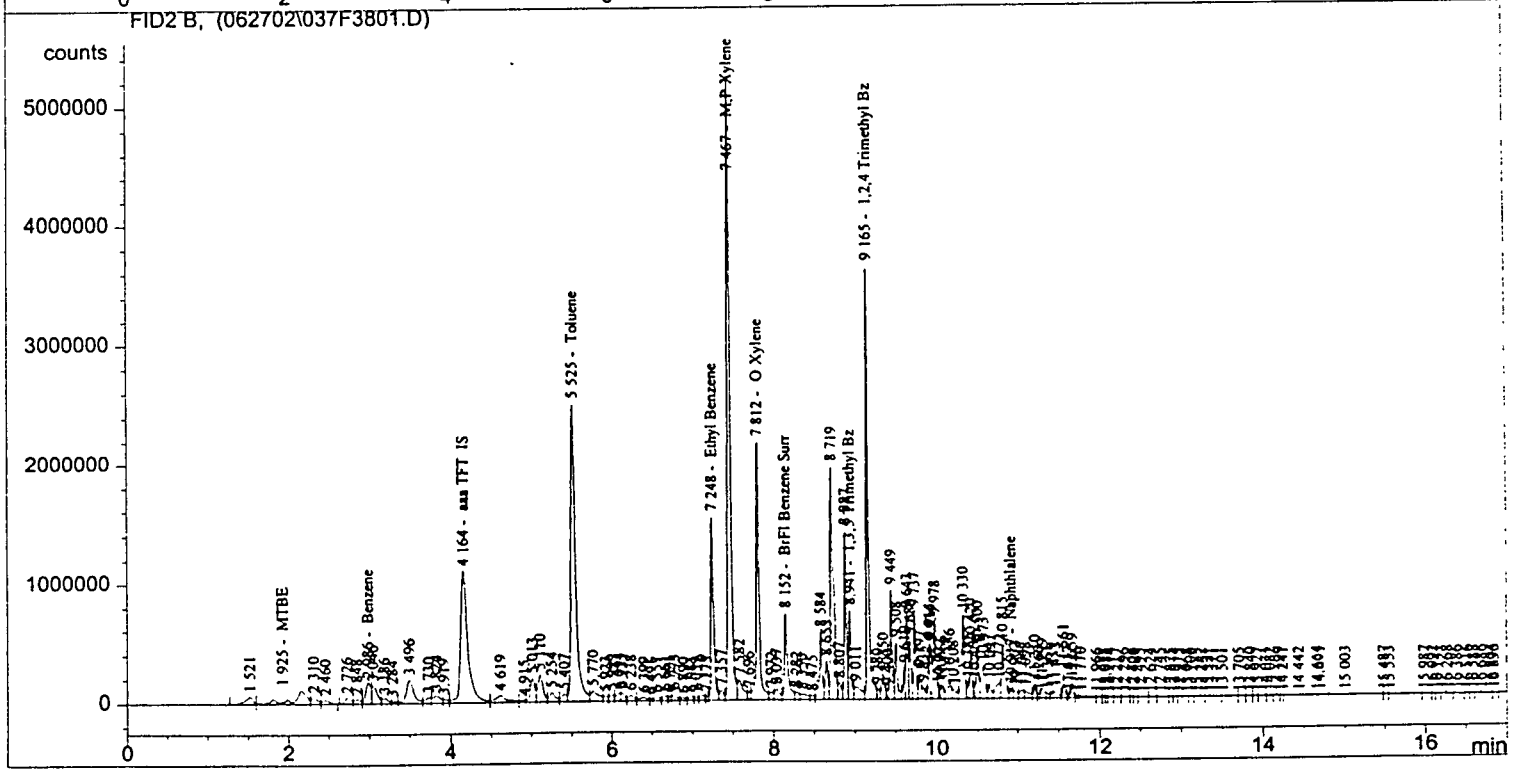
16

Data File D:\HPCHEM\4\DATA\062702\037F3801.D Sample Name: S021681347 Cotea

Injection Date	: 6/28/02 11:09:47 AM	Seq. Line	: 38
Sample Name	: S021681347 Cotea	Vial	: 37
Acq. Operator	: dcd	Inj	: 1
		Inj Volume	: Manually
Acq. Method	: C:\HPCHEM\1\METHODS\!GC4ACQ.M		
Last changed	: 4/25/01 1:43:18 PM by dcd		
Analysis Method	: D:\HPCHEM\4\METHODS\05242SLB.M		
Last changed	: 6/28/02 10:58:34 AM by dcd		

25ml
5 1ml 24.8g
100:1

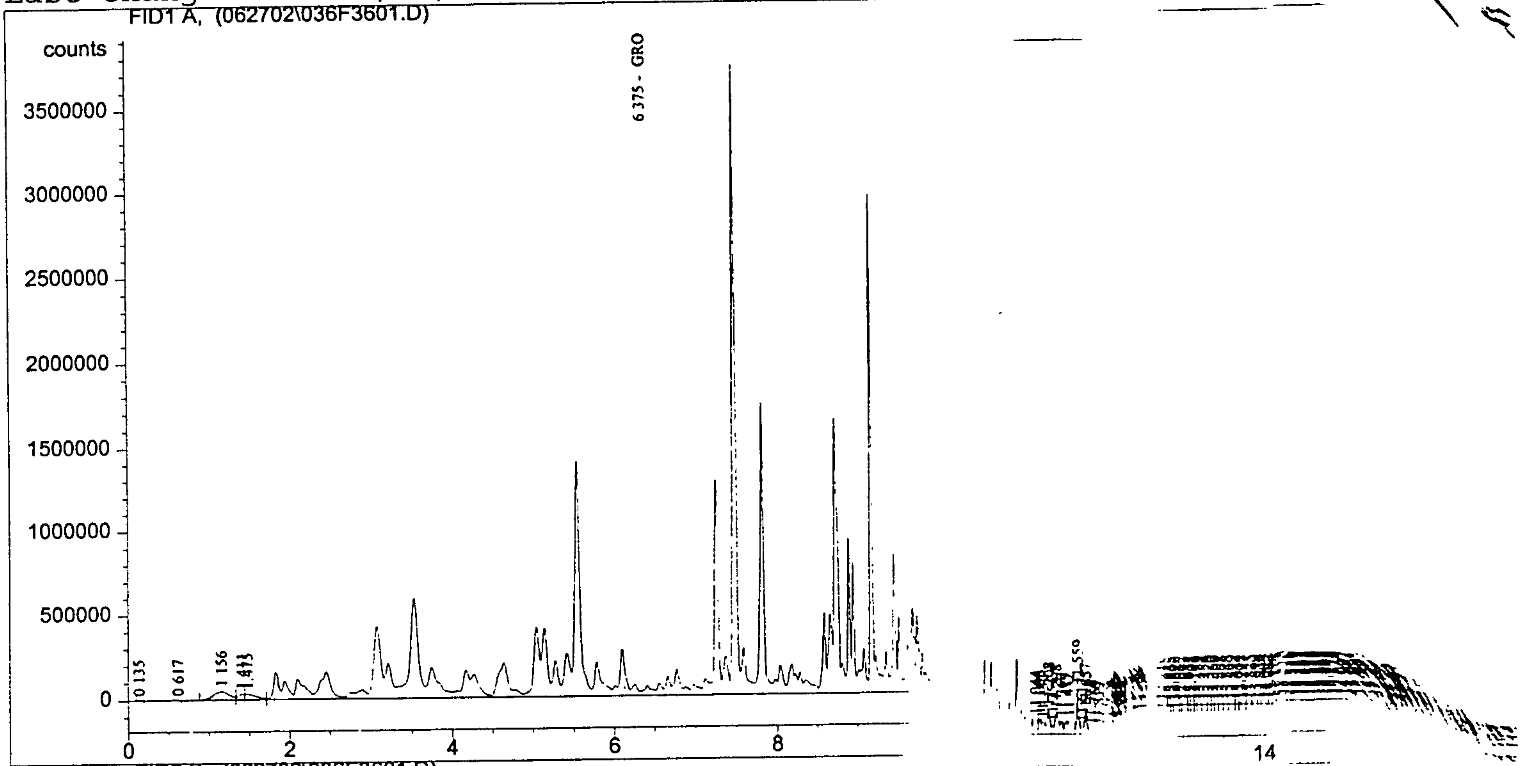


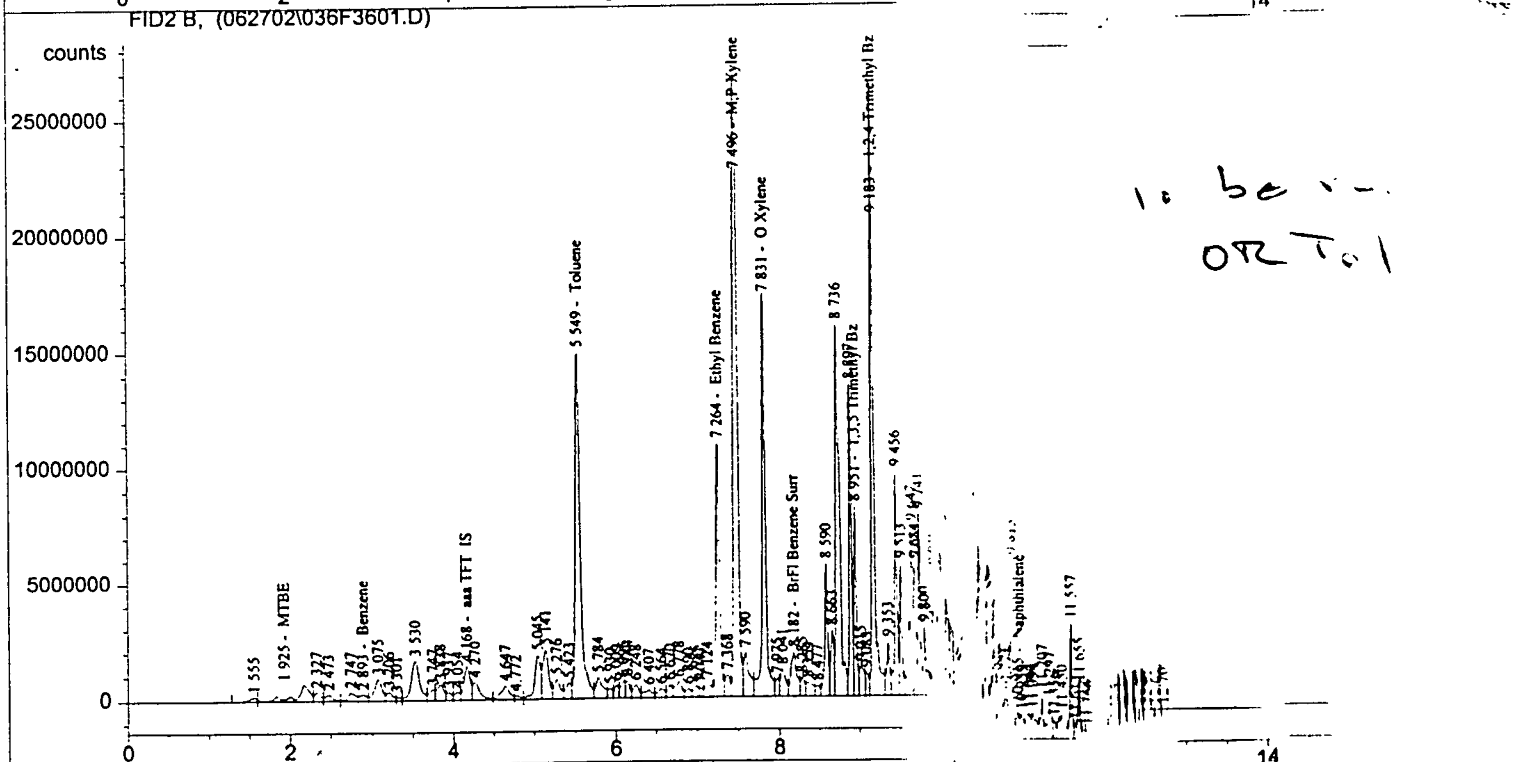


Data File D:\HPCHEM\4\DATA\062702\036F3601.D Sample Name: S0216

Injection Date	: 6/28/02 9:54:24 AM		: 36
Sample Name	: S021681357 Cotea	Seq. Line	: 36
Acq. Operator	: dcd		: 1
			: Manual
Acq. Method	: C:\HPCHEM\1\METHODS\!GC4ACQ.M	Inj Vol	
Last changed	: 4/25/01 1:43:18 PM by dcd		
Analysis Method	: D:\HPCHEM\4\METHODS\05242SLB.		
Last changed	: 6/28/02 10:58:34 AM by dcd		

100ml





1, be ...
OR Tol

Northeast Technical Services, Inc.
315 Chestnut Street
P.O. Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax: 218-741-4291

Chain of Custody Record

COC# 19246 Page _____ of _____

Date Due: _____

Client Information

Client: Coteau Environmental

Contact Person: Nate Hunke

Address: 3930 Sunnybrook Drive NW Alexandria, MN 56308

Phone: (320) 846-4668

Fax: (605) 882-4152

Project Information: K-C Kwik Stop - Brooten, MN

Report to:

Coteau Environmental

Address: 3930 Sunnybrook Drive NW Alexandria, MN 56308

Invoice to:

Coteau Environmental

Address: Same as above

BTEX/MTBE/GRO
% Solids/Moisture

Lab Use Only Laboratory ID	Sample Description	Collection Date	Collection Time	Matrix Liquid	Matrix Solid	Matrix Other	Type Grab	Type Comp	Filtered	Analysis Required									Comments
21681347	B-1 (9-12)				X					X	X								
1355	B-2 (10-12)				X					X	X								
1356	B-3 (9-12)				X					X	X								
1357	B-3 (15-18)				X					X	X								
135A	B-4 (9-11)				X					X	X								

Relinquished By: AMS	Date 6-13-02 Time	Received By:	Date Time	Received for Laboratory By:	Date 6-17-02 Time 9:30	NTS Project # 5828.05	
Relinquished By: Ty Schmidt	Date 6-14-02 Time 4:00 PM	Received By:	Date Time	Temperature on Arrival On Ice _____ _____ Degrees Celsius		Misc. Lab Information	

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID: S022251617	Project #: 5828.10	Sampler: Client	Type: Grab
Client: Coteau Environmental		Status: Normal	Matrix: Soil
Study: Consultant		NTS COC No: 20472	
Descript: KC Kwik Stop		Sampled: 8/6/2002 4:50 PM	
Location: B-5 (8-10)		Completed: 08/27/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	8/15/2002	<4	mg/Kg	4	WI Method
Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Moisture	8/13/2002	11	%	0.1	EPA 160.3
Toluene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	8/15/2002	<60	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S022251627	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 20472	
Descript:	KC Kwik Stop			Sampled: 8/6/2002 5:45 PM	
Location:	B-5(17-19)			Completed: 08/27/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	8/15/2002	17	mg/Kg	4	WI Method
Benzene, Soil	8/15/2002	260	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	8/15/2002	410	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	8/15/2002	300	ug/Kg	50	SW 846 8021B
Moisture	8/13/2002	16	%	0.1	EPA 160.3
Toluene, Soil	8/15/2002	110	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	8/15/2002	2100	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S022251630	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 20472	
Descript:	KC Kwik Stop			Sampled: 8/6/2002 9:45 AM	
Location:	B-6(2-4)			Completed: 08/27/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	8/15/2002	<4	mg/Kg	4	WI Method
Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Moisture	8/13/2002	11	%	0.1	EPA 160.3
Toluene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	8/15/2002	<60	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S022251631	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 20472	
Descript:	KC Kwik Stop			Sampled: 8/6/2002 9:45 AM	
Location:	B-6(8-10)			Completed: 08/27/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	8/15/2002	<4	mg/Kg	4	WI Method
Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Moisture	8/13/2002	13	%	0.1	EPA 160.3
Toluene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	8/15/2002	<60	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S022251632	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 20472	
Descript:	KC Kwik Stop			Sampled: 8/6/2002 12:10 PM	
Location:	B-7(8-10)			Completed: 08/27/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	8/15/2002	<4	mg/Kg	4	WI Method
Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Moisture	8/13/2002	14	%	0.1	EPA 160.3
Toluene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	8/15/2002	<60	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S022251633	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 20472	
Descript:	KC Kwik Stop			Sampled: 8/6/2002 12:45 PM	
Location:	B-7(12-14)			Completed: 08/27/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	8/15/2002	<4	mg/Kg	4	WI Method
Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Moisture	8/13/2002	16	%	0.1	EPA 160.3
Toluene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	8/15/2002	<60	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S022251634	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 20472	
Descript:	KC Kwik Stop			Sampled: 8/6/2002 2:50 PM	
Location:	B-8(8-10)			Completed: 08/27/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	8/15/2002	<4	mg/Kg	4	WI Method
Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	8/15/2002	90	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Moisture	8/13/2002	7.3	%	0.1	EPA 160.3
Toluene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	8/15/2002	270	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S022251636	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 20472	
Descript:	KC Kwik Stop			Sampled: 8/6/2002 3:45 PM	
Location:	B-8(13-15)			Completed: 08/27/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	8/15/2002	<4	mg/Kg	4	WI Method
Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Moisture	8/13/2002	18	%	0.1	EPA 160.3
Toluene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	8/15/2002	<60	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken This warranty is in lieu of all other warranties either expressed or implied

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S02225163A	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Soil
Study:	Consultant			NTS COC No: 20472	
Descript:	KC Kwik Stop			Sampled: 8/6/2002 5:45 PM	
Location:	B-9(8-10)			Completed: 08/27/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	8/15/2002	<4	mg/Kg	4	WI Method
Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Moisture	8/13/2002	18	%	0.1	EPA 160.3
Toluene, Soil	8/15/2002	<50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	8/15/2002	<60	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied

Northeast Technical Services, Inc.
315 Chestnut Street
P.O. Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax: 218-741-4291

Chain of Custody Record

COC# 26472 Page 1 of 1

Date Due: _____

ation	Report to:
oTeau Environmental	Address: COTeau Environmental 3930 Sunnybrook Dr. NW Alexandria, MN 56308
NATE	
930 Sunnybrook Dr. NW	
lexandria, MN 56308	Invoice to:
20-846-4068	Address:
05-882-4152	
ation: KC's Kwik Stop	

BTEX / MTBE / TPH-GRO / % Solids

ratory ID	Sample Description	Collection Date	Collection Time	Matrix Liquid	Matrix Solid	Matrix Other	Type Grab	Type Comp	Filtered	Analysis Required	Comments
251617	B-5(8-10) PID-92.0	8-6-02	1650							✓ ✓ ✓ ✓	
1627	B-5(17-19) PID-526.0	8-6-02	1745							✓ ✓ ✓ ✓	
1630	B-6(2-4) PID-61.0	8-7-02	0945							✓ ✓ ✓ ✓	
1631	B-6(8-10) PID-332.0	8-7-02	0945							✓ ✓ ✓ ✓	
1632	B-7(8-10) PID-3.7	8-7-02	1210							✓ ✓ ✓ ✓	
1633	B-7(12-14) PID-50.0	8-7-02	1245							✓ ✓ ✓ ✓	
1634	B-8(8-10) PID-11.0	8-7-02	1450							✓ ✓ ✓ ✓	
1636	B-8(13-15) PID-8.6	8-7-02	1545							✓ ✓ ✓ ✓	
163A	B-9(8-10) PID-4.0	8-7-02	1745							✓ ✓ ✓ ✓	

	Date	Received By:	Date	Received for Laboratory By:	Date	NTS Project #
	8-8-02				13:40	5828.10
	Time 1730		Time		Time 8-13-02	Misc. Lab Information
y:	Date	Received By:	Date	Temperature on Arrival		
	Time		Time	On Ice _____	4°C Degrees C	

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021121045	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Solid
Study:	Consultant			NTS COC No: 17760	
Descript:	KC Kwik Stop			Sampled: 4/17/2002 11:00 AM	
Location:	B-1 (8-9')			Completed: 05/06/2002	

Notes:

DRO Extraction Date: 04/25/02

Analyte	Analysis Date	Result	Units	RL	Method
DRO, Soil	5/1/2002	< 10	mg/Kg	10	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	8.6	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021121051	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Solid
Study:	Consultant			NTS COC No: 17760	
Descript:	KC Kwik Stop			Sampled: 4/17/2002 12:00 PM	
Location:	N. Sidewall (10-11)			Completed: 05/06/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	16000	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	17000	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	340000	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	200000	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	16	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	880000	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	1400000	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021121055	Project #: 5828.10	Sampler: Client	Type: Grab	
Client:	Coteau Environmental		Status: Normal	Matrix: Solid	
Study:	Consultant		NTS COC No: 17760		
Descript:	KC Kwik Stop		Sampled: 4/17/2002 1:00 PM		
Location:	B-3 (9-10')		Completed: 05/06/2002		

Notes:

Closing QC %recovery for BTEX ranged from 68-80%.

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	< 4	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	16	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021121056	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Solid
Study:	Consultant			NTS COC No: 17760	
Descript:	KC Kwik Stop			Sampled: 4/17/2002 2:15 PM	
Location:	B-4 (9-10')			Completed: 05/06/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	140	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	2600	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	4600	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	960	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	16	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	15000	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	21000	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021121057	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Solid
Study:	Consultant			NTS COC No: 17760	
Descript:	KC Kwik Stop			Sampled: 4/17/2002 2:45 PM	
Location:	West P.I. (2-3')			Completed: 05/06/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	5.4	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	19	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	230	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S02112105A	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Solid
Study:	Consultant			NTS COC No: 17760	
Descript:	KC Kwik Stop			Sampled: 4/17/2002 2:30 PM	
Location:	East P.I. (2-3')			Completed: 05/06/2002	

Notes:

Higher hydrocarbons present.

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	11	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	15	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID: S02112105B	Project #: 5828.10	Sampler: Client	Type: Grab
Client: Coteau Environmental		Status: Normal	Matrix: Solid
Study: Consultant		NTS COC No: 17760	
Descript: KC Kwik Stop		Sampled: 4/17/2002 3:00 PM	
Location: B-2 (8-9')		Completed: 05/06/2002	

Notes:

DRO Extraction Date: 04/25/02

Analyte	Analysis Date	Result	Units	RL	Method
DRO, Soil	5/3/2002	< 10	mg/Kg	10	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	4.3	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By: _____
Project Manager:

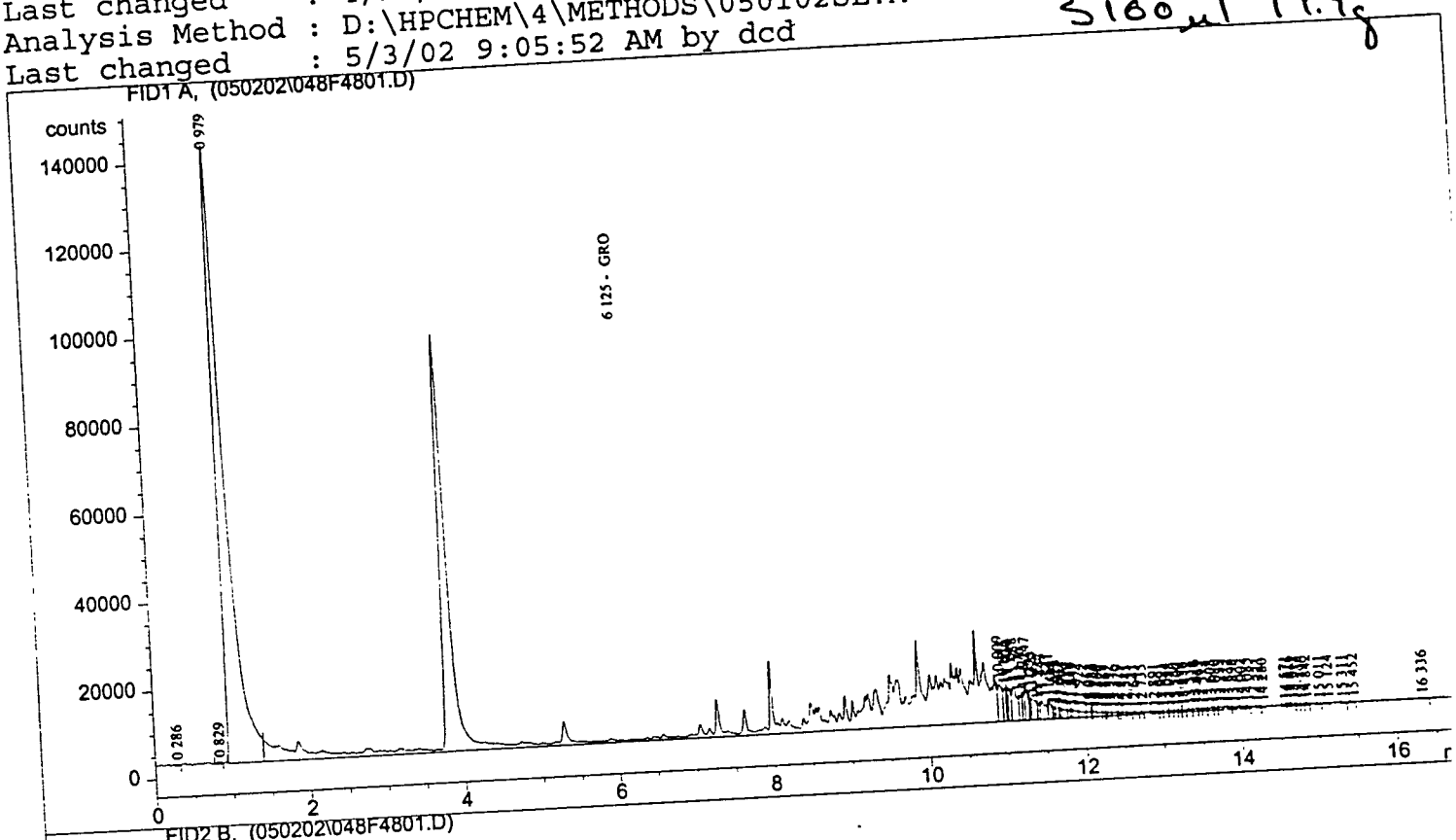
Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

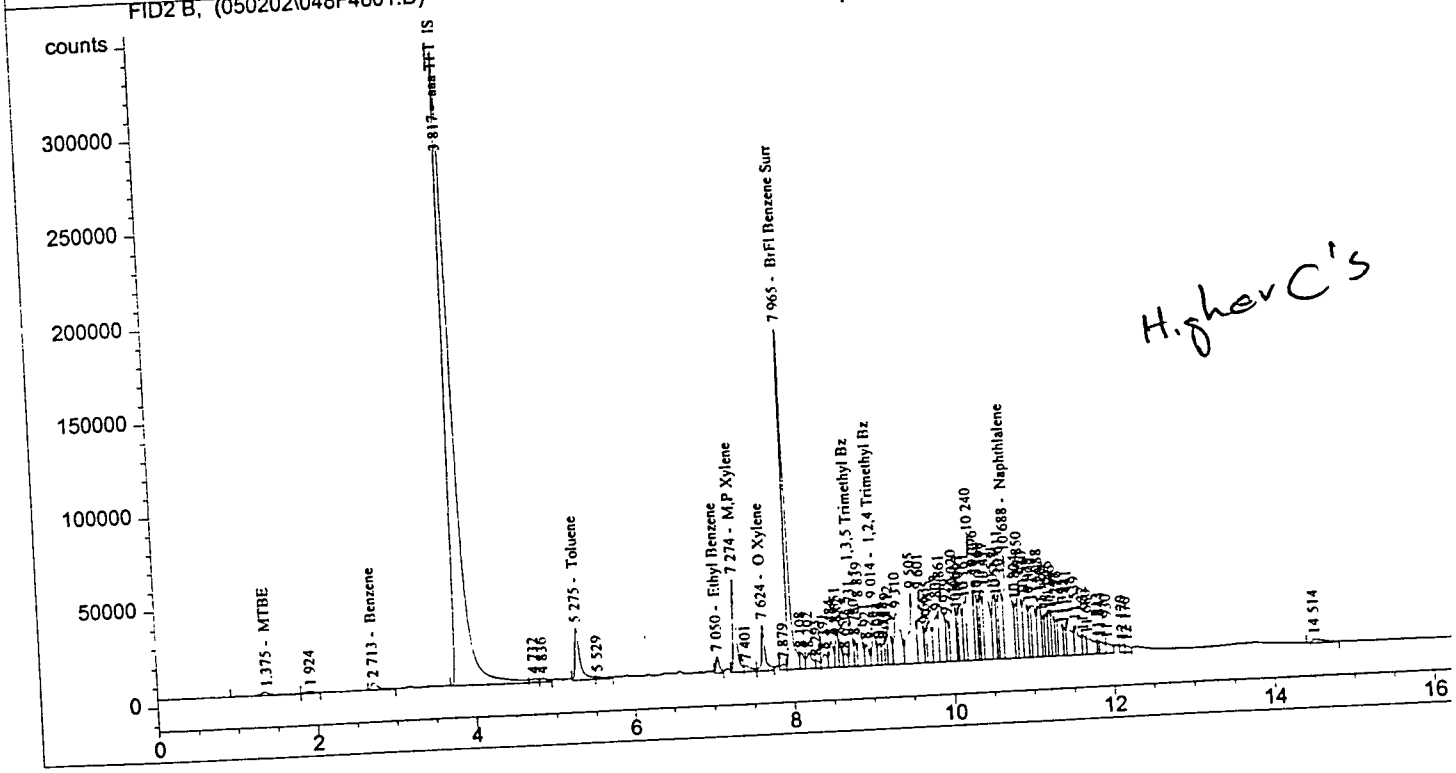
Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

Data File D:\HPCHEM\4\DATA\050202\048F4801.D Sample Name: S02112105A dupe

Injection Date	: 5/3/02 11:13:34 AM	Seq. Line	: 48
Sample Name	: S02112105A dupe	Vial	: 48
Acq. Operator	: dcd	Inj	: 1
		Inj Volume	: Manually
Acq. Method	: C:\HPCHEM\1\METHODS\!GC4ACQ.M		
Last changed	: 4/25/01 1:43:18 PM by dcd		
Analysis Method	: D:\HPCHEM\4\METHODS\050102SL.M		
Last changed	: 5/3/02 9:05:52 AM by dcd		

25ml
5100ml 19.9g





H. gher C's

5/3/02 2:38:04 PM dcd

Data File D:\HPCHEM\4\DATA\050202\049F4901.D

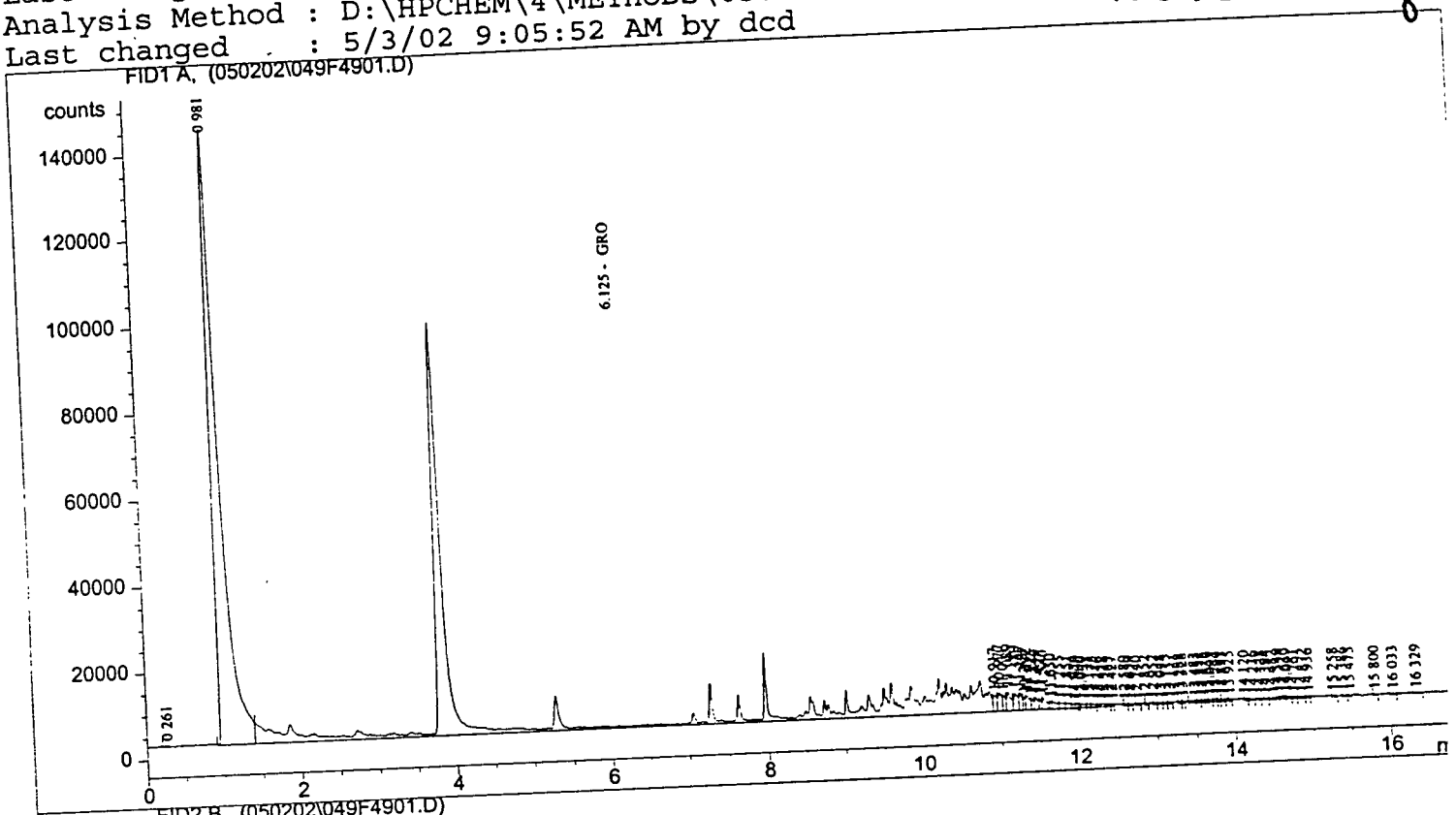
Sample Name: S021121057

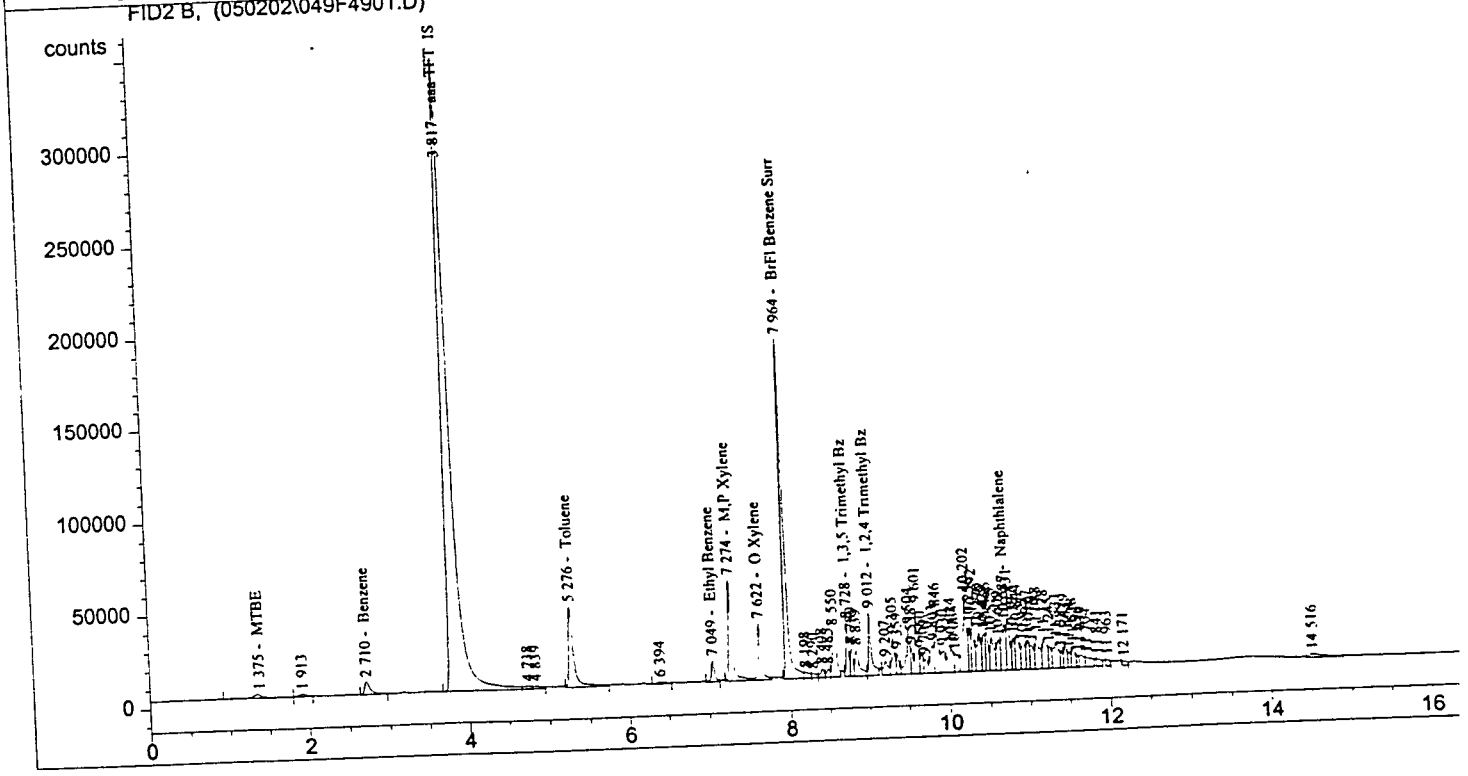
Injection Date : 5/3/02 11:46:35 AM
Sample Name : S021121057
Acq. Operator : dcd

Seq. Line : 49
Vial : 49
Inj : 1
Inj Volume : Manually

Acq. Method : C:\HPCHEM\1\METHODS\!GC4ACQ.M
Last changed : 4/25/01 1:43:18 PM by dcd
Analysis Method : D:\HPCHEM\4\METHODS\050102SL.M
Last changed : 5/3/02 9:05:52 AM by dcd

5 100 ml 21.2g





GC-4 5/3/02 2:38:23 PM dcd

Data File D:\HPCHEM\4\DATA\050202\045F4501.D

Sample Name: S021121056

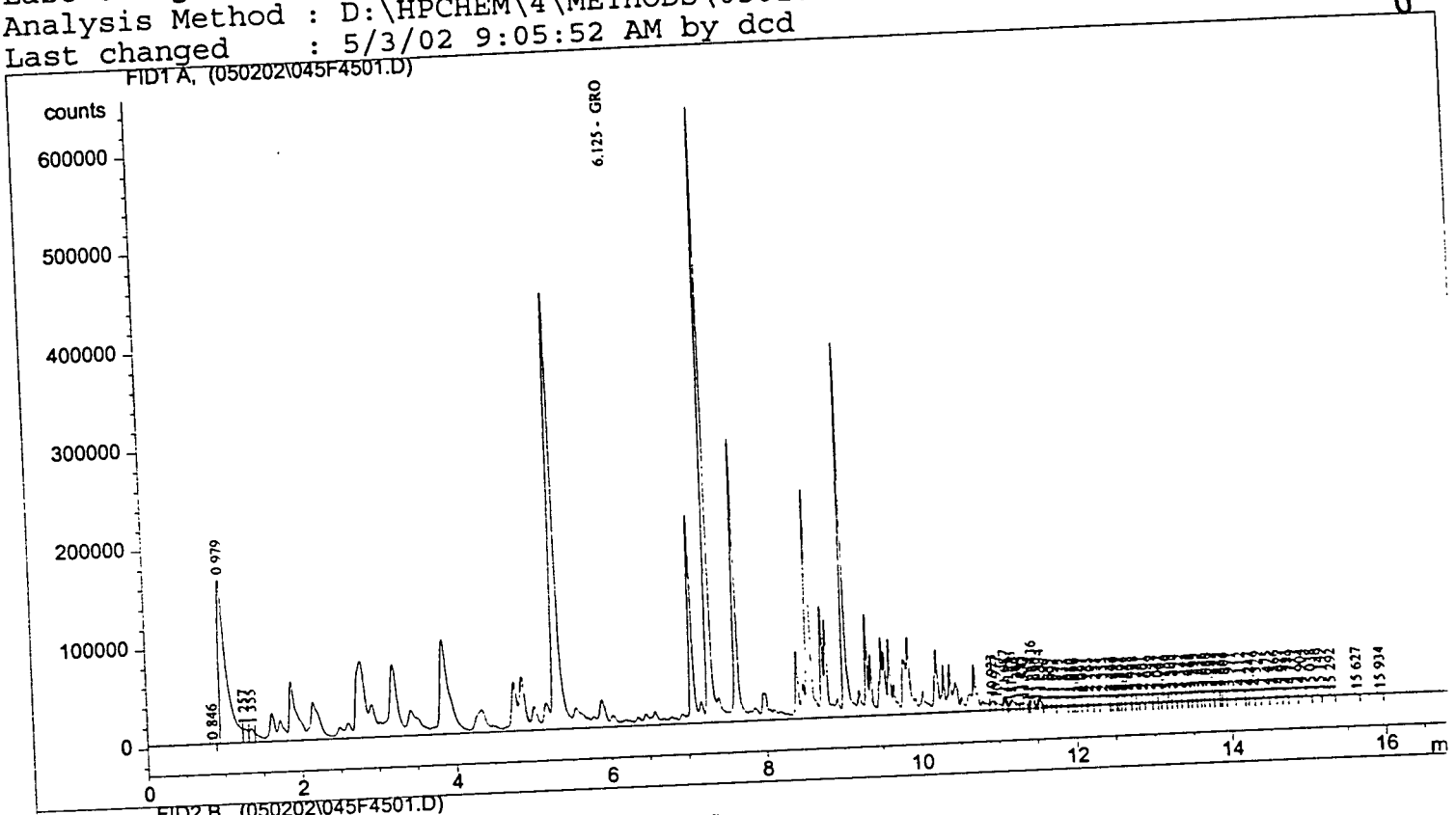
==========

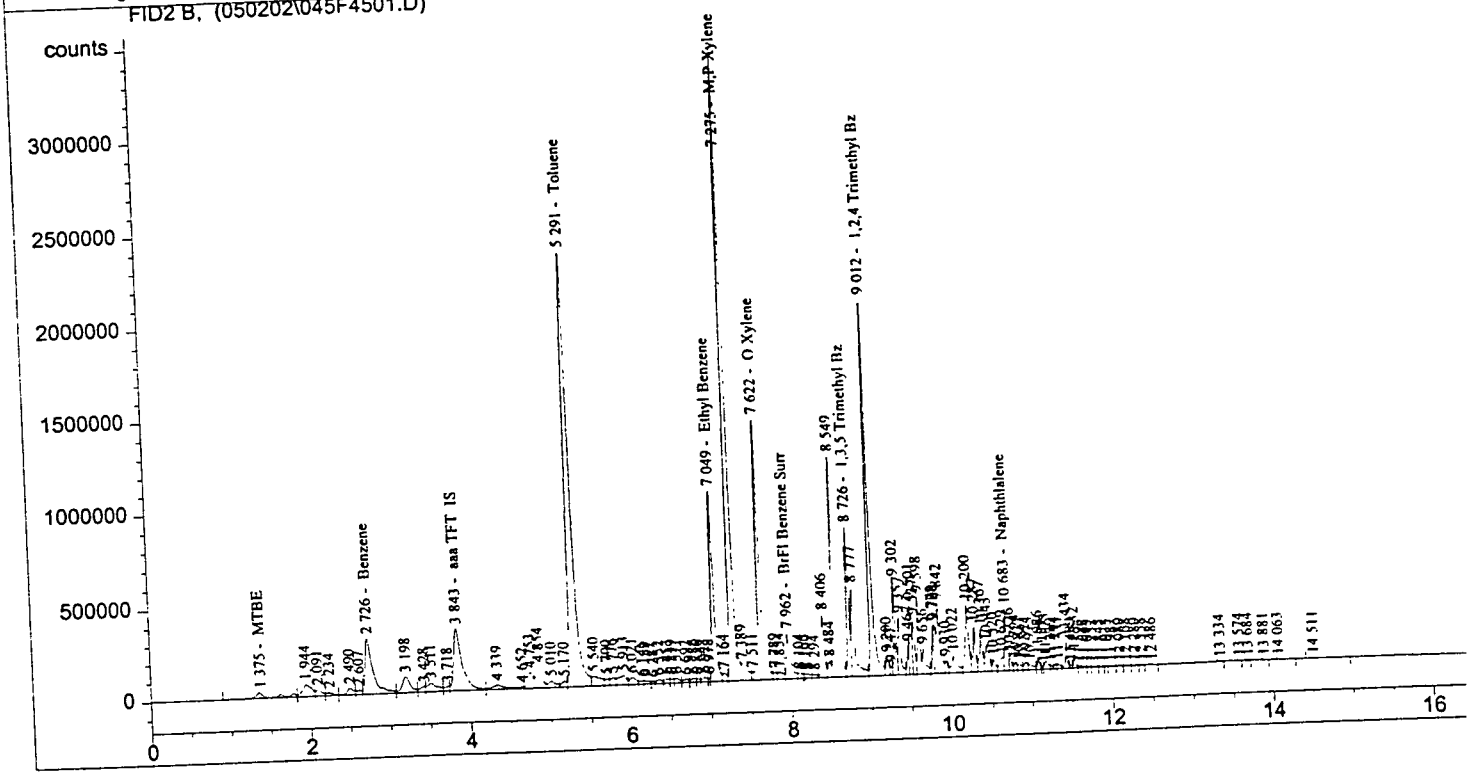
Injection Date : 5/3/02 9:34:29 AM
Sample Name : S021121056
Acq. Operator : dcd

Seq. Line : 45
Vial : 45
Inj : 1
Inj Volume : Manually

Acq. Method : C:\HPCHEM\1\METHODS\!GC4ACQ.M
Last changed : 4/25/01 1:43:18 PM by dcd
Analysis Method : D:\HPCHEM\4\METHODS\050102SL.M
Last changed : 5/3/02 9:05:52 AM by dcd

25ml
5 100ml 1g





GC-4 5/3/02 2:37:33 PM dcd

Data File D:\HPCHEM\4\DATA\050302\004F0401.D

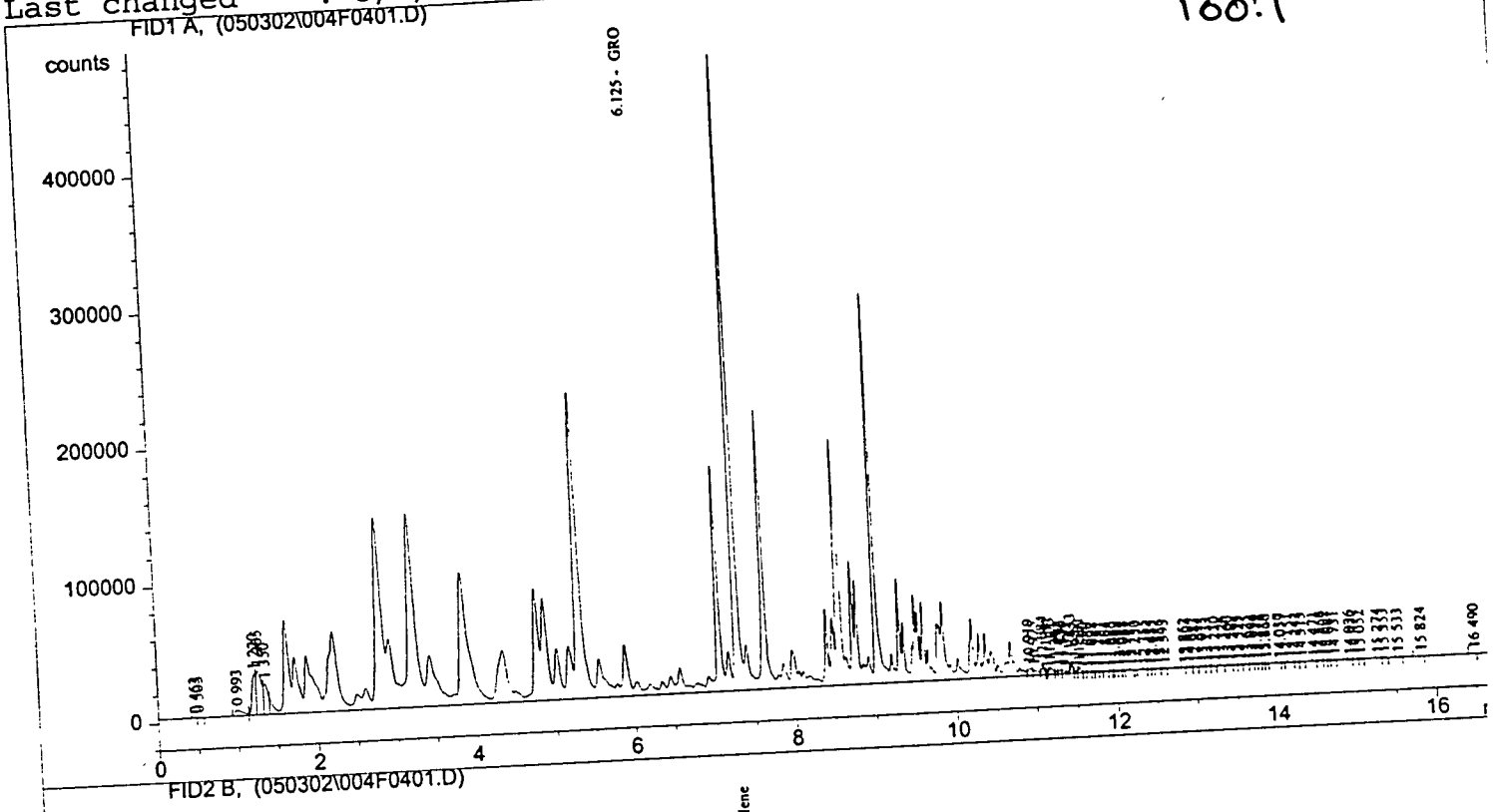
Sample Name: S021121051 rr

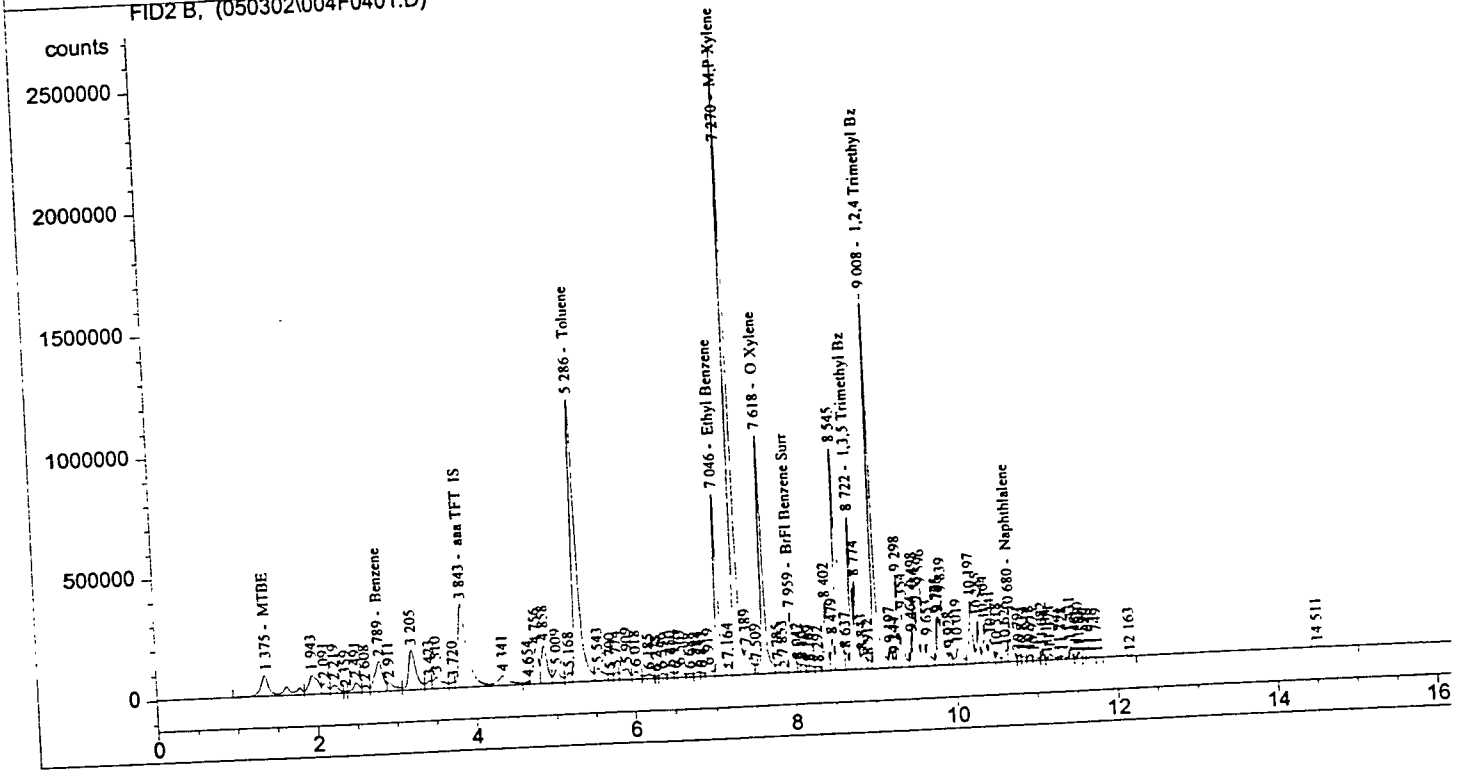
Injection Date : 5/3/02 5:48:04 PM
Sample Name : S021121051 rr
Acq. Operator : dcd

Seq. Line : 4
Vial : 4
Inj : 1
Inj Volume : Manually

Acq. Method : C:\HPCHEM\1\METHODS\!GC4ACQ.M
Last changed : 4/25/01 1:43:18 PM by dcd
Analysis Method : D:\HPCHEM\4\METHODS\050102SL.M
Last changed : 5/3/02 9:05:52 AM by dcd

25 ml
5 1ml 14g
100:1





GC-4 5/6/02 9:07:36 AM dcd

Northeast Technical Services, Inc.
315 Chestnut Street
P.O. Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax: 218-741-4291

Chain of Custody Record

COC# 17760

Page _____ of _____

Date Due: _____

COC # 5828.10

Client Information	Report to:
Client: Coteau Environmental	Coteau Environmental
Contact Person: Nate	Address: 3930 Sunnybrook Dr NW Alexandria MN 56308
Address: 3930 Sunnybrook Dr. NW Alexandria MN 56308	Invoice to:
Phone: 320 846-4668	Address: - Same as above
Fax: 605 882-4152	
Project Information: K-C Kwik Stop	

Lab Use Only Laboratory ID	Sample Description	Collection Date	Collection Time	Matrix Liquid	Matrix Solid	Matrix Other	Type Grab	Type Comp	Filtered	Analysis Required: BTEX	% Solids (Moisture)	DRO	BTEX/MTBE/GRO	Comments
502112045	B-1 (8-9')	4-17	1100		X					X	X	X		
1051	N Sidewall (10-11)	4-17	1200		X						X		X	
1055	B-3 (9-10')	4-17	1300		X						X		X	
1056	B-4 (9-10')	4-17	1415		X						X		X	
1058	East P.I (2-3)	4-17	1430		X						X		X	
1057	West P.I (2-3')	4-17	1445		X						X		X	
1058	B-2 (8-9')	4-17	1500		X					X	X	X		

Sampled By:	Date	Received By:	Date	Received for Laboratory By:	Date	NTS Project #
AS	Time	Jon Bergman	Time		4-19-02	
					Time 9:00	Misc. Lab Information
Relinquished By:	Date 4-18	Received By:	Date	Temperature on Arrival		
Jon Bergman	Time 1500	UPS	Time	On Ice X	_____ Degrees Celsius	

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

April 23, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 4/17/02
Date Received: 4/19/02
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: 8021
Units: ug/L
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

	Lab Sample ID: 021593-01
	Client Sample ID. Basin
	Detection Limit (ug/L) 2.5
	Date Analyzed: 4/20/02
Benzene	110.0
Toluene	479.0
Ethylbenzene	185.0
Total Xylene	842.0
% Surrogate Recovery	130.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

April 23, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected:	4/17/02
Date Received:	4/19/02
Project #:	K-C Kwik Stop
Client ID #:	See Below
Laboratory ID #:	See Below
Matrix:	Liquid
Method:	WI Mod.
Units:	ug/l
Analyst:	MS
Detection Limit:	See Below
Date of Analysis:	See Below

Lab Sample ID:	021593-01
Client Sample ID:	Basin
Detection Limit (ug/l)	100.0
Date Analyzed:	4/20/02
TPH-GRO	6707.0
% Surrogate Recovery	130.0

Laboratory Manager, Bassam Youssef

SUMMIT ENVIRONMENTAL TECHNOLOGIES, INC.
595 EAST TALLMADGE AVENUE
AKRON, OHIO 44310
TEL: 330/253-8211; FAX: 330/253-4489

CHAIN OF CUSTODY

A2LA CERTIFICATION #: 0724-01

s.e.t.

PROJECT NAME: K-C KWIK STOP PROJECT LOCATION: Brooten MN PO#: K-C

CLIENT NAME: Coteau Environmental CLIENT ADDRESS: 3930 Sunnybrook Dr., Alexandria MN 56308

CONTACT PERSON: Nate PHONE #: 320 846-4668 FAX #: 605 882-4152 SAMPLED BY: AS

#	SAMPLE ID#	MEDIA	TIME	DATE	BTEX 8020	GRO 8015M	DRO 8015M	TPH 418.1	TCLP METALS	TCLP VOCS	TCLP BNAS	TCLP PEST/HERB	OTHERS
1	Basin	Water	1300	4-17	✓	✓							[illegible]

021593.01

SPECIAL INSTRUCTIONS:

RELINQUISHED BY: Jon Bergmann for AS DATE: 4-18-02 RECEIVED BY: DATE:

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID: S021121045	Project #: 5828.10	Sampler: Client	Type: Grab
Client: Coteau Environmental		Status: Normal	Matrix: Solid
Study: Consultant		NTS COC No: 17760	
Descript: KC Kwik Stop		Sampled: 4/17/2002 11:00 AM	
Location: B-1 (8-9')		Completed: 05/06/2002	

Notes:

DRO Extraction Date: 04/25/02

Analyte	Analysis Date	Result	Units	RL	Method
DRO, Soil	5/1/2002	< 10	mg/Kg	10	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	8.6	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID: S021121051	Project #: 5828.10	Sampler: Client	Type: Grab
Client: Coteau Environmental		Status: Normal	Matrix: Solid
Study: Consultant		NTS COC No: 17760	
Descript: KC Kwik Stop		Sampled: 4/17/2002 12:00 PM	
Location: N. Sidewall (10-11)		Completed: 05/06/2002	

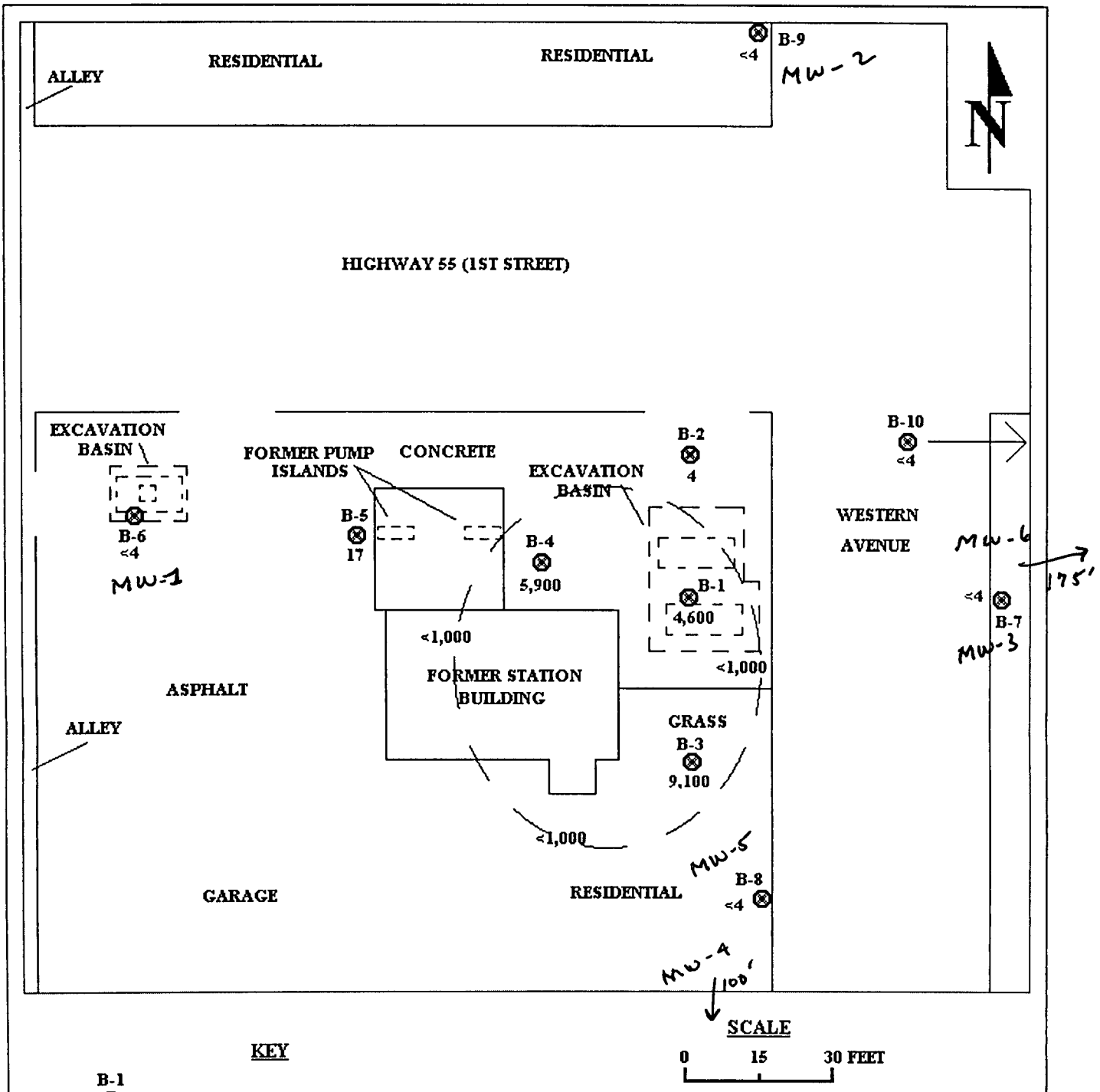
Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	16000	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	17000	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	340000	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	200000	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	16	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	880000	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	1400000	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S Environmental Protection Agency and the Minnesota Department of Health



KEY

B-1 ⊗	SOIL BORING LOCATION
B-3 ⊗ 9,100	SOIL TPH CONCENTRATION (PPM)
—<1,000—	SOIL TPH CONCENTRATION CONTOUR(APPROXIMATE)
TPH	TOTAL PETROLEUM HYDROCARBONS
UST	UNDERGROUND STORAGE TANK

FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

SOIL TPH CONCENTRATIONS

DATE	REVISED

COTEAU ENVIRONMENTAL
728 JANES CIRCLE DR. SW
ALEXANDRIA, MN 56308
(320) 846-4668

DRAWN BY:	DATE: AUG 03	FIGURE: 5

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID: S021121055	**Project #:** 5828.10	**Sampler:** Client	**Type:** Grab
		Status: Normal	**Matrix:** Solid
Client: Coteau Environmental		**NTS COC No:** 17760	
Study: Consultant		**Sampled:** 4/17/2002 1:00 PM	
Descript: KC Kwik Stop		**Completed:** 05/06/2002	
Location: B-3 (9-10')			

Notes:

Closing QC %recovery for BTEX ranged from 68-80%.

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	< 4	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	16	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S021121056	Project #:	5828.10	Sampler: Client	Type: Grab
Client:	Coteau Environmental			Status: Normal	Matrix: Solid
Study:	Consultant			NTS COC No: 17760	
Descript:	KC Kwik Stop			Sampled: 4/17/2002 2:15 PM	
Location:	B-4 (9-10')			Completed: 05/06/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	140	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	2600	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	4600	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	960	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	16	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	15000	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	21000	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID: S021121057	Project #: 5828.10	Sampler: Client	Type: Grab
Client: Coteau Environmental		Status: Normal	Matrix: Solid
Study: Consultant		NTS COC No: 17760	
Descript: KC Kwik Stop		Sampled: 4/17/2002 2:45 PM	
Location: West P.I. (2-3')		Completed: 05/06/2002	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	5.4	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	19	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	230	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID: S02112105A	Project #: 5828.10	Sampler: Client	Type: Grab
Client: Coteau Environmental		Status: Normal	Matrix: Solid
Study: Consultant		NTS COC No: 17760	
Descript: KC Kwik Stop		Sampled: 4/17/2002 2:30 PM	
Location: East P.I. (2-3')		Completed: 05/06/2002	

Notes:

Higher hydrocarbons present.

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	5/3/2002	11	mg/Kg	4	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Methyl tert-butyl ether	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	15	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID:	S02112105B	**Project #:**	5828.10	**Sampler:** Client	**Type:** Grab
Client:	Coteau Environmental			**Status:** Normal	**Matrix:** Solid
Study:	Consultant			**NTS COC No:** 17760	
Descript:	KC Kwik Stop			**Sampled:** 4/17/2002 3:00 PM	
Location:	B-2 (8-9')			**Completed:** 05/06/2002	

Notes:

DRO Extraction Date: 04/25/02

Analyte	Analysis Date	Result	Units	RL	Method
DRO, Soil	5/3/2002	< 10	mg/Kg	10	WI Method
Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Ethyl Benzene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Moisture	4/25/2002	4.3	%	0.1	EPA 160.3
Toluene, Soil	5/3/2002	< 50	ug/Kg	50	SW 846 8021B
Total Xylenes, Soil	5/3/2002	< 60	ug/Kg	60	SW 846 8021B

Approved By: _____

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristi of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

Northeast Technical Services, Inc.
315 Chestnut Street
P.O. Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax. 218-741-4291

Chain of Custody Record

COC# ~~177760~~ Page _____ of _____

Date Due: _____

COC # 5828.10

Client Information	Report to:
Client: Coteau Environmental	Coteau Environmental
Contact Person: Nate	Address: 3930 Sunnybrook Dr NW Alexandria MN 56308
Address: 3930 Sunnybrook Dr. NW Alexandria MN 56308	Invoice to:
Phone: 320 846-4668	Address: – Same as above
Fax: 605 882-4152	
Project Information: K-C Kwik Stop	

Lab Use Only Laboratory ID	Sample Description	Collection Date	Collection Time	Matrix Liquid	Matrix Solid	Matrix Other	Type Grab	Type Comp	Filtered	Analysis Required: BTEX	Solids (moisture)	DRO	BTEX/MTBE/GRO	Comments
502121045	B-1 (8-9')	4-17	1100		X					X	X	X		
1051	N Sidewall (10-11)	4-17	1200		X						X		X	
1055	B-3 (9-10')	4-17	1300		X						X		X	
1056	B-4 (9-10')	4-17	1415		X						X		X	
1054	East P.I (2-3)	4-17	1430		X						X		X	
1057	West P.I (2-3')	4-17	1445		X						X		X	
1058	B-2 (8-9')	4-17	1500		X					X	X	X		

Sampled By:	Date	Received By:	Date	Received for Laboratory By:	Date	NTS Project #
AS	Time	Jon Bergmann	Time	[illegible]	4-19-02	
Relinquished By:	Date 4-18	Received By:	Date	Temperature on Arrival:	Time 9:00	Misc. Lab Information
Jon Bergmann	Time 1500	UPS	Time	On Ice X _____ Degrees Celsius		

"Solutions for Technical Concerns"

MDH Laboratory # 027-137-157

Sample ID: S030381114	Project #: 5828.10	Sampler: Client	Type: Grab
Client: Coteau Environmental		Status: Normal	Matrix: Soil
Study: Consultant		NTS COC No: 23562	
Descript: KC Kwik Stop		Sampled: 2/4/2003 05:30 PM	
Location: B-10 (10-12)		Completed: 02/13/2003	

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
GRO, Soil	2/12/2003	<4	mg/Kg	4	WI Method
Benzene, Soil	2/12/2003	<100	ug/Kg	100	SW 846 8021B
Ethyl Benzene, Soil	2/12/2003	<70	ug/Kg	70	SW 846 8021B
Methyl tert-butyl ether	2/12/2003	<120	ug/Kg	120	SW846 8021
Moisture	2/9/2003	16	%	0.1	EPA 160.3
Toluene, Soil	2/12/2003	<100	ug/Kg	100	SW 846 8021B
Total Xylenes, Soil	2/12/2003	<200	ug/Kg	200	SW 846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristic of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

Northeast Technical Services, Inc.
315 Chestnut Street
P.O. Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax: 218-741-4291

Chain of Custody Record

COC# 23562 Page _____ of _____

Date Due: _____

Client Information
Client: Coleau Environmental
Contact Person: Kuta
Address: 3930 Sunnybrook Dr. NW
Alexandria MN 56308
Phone: 320-846-4668
Fax: 605 882-4152
Project Information: KC Kwikstop Brooten

Report to:
Address: Coleau Environmental
3930 Sunnybrook Dr. NW
Alexandria MN 56308

Invoice to:
Address: - same as above -

BTEX/MTBE
TPH-GRO
TPH-DRO

Lab Use Only Laboratory ID	Sample Description	Collection Date	Collection Time	Matrix Liquid	Matrix Solid	Matrix Other	Type Grab	Type Comp	Filtered	Analysis Required	Comments
S03038 1114	B-10 (10-12) PID 2.5	2-4-03	1730		X		Y			X X X	

Sampled By: TDB	Date 2-4-03 Time —	Received By:	Date	Received for Laboratory By:	Date 2-6-03	NTS Project # 5828.10	
			Time		Time 15:25	Misc. Lab Information	
Relinquished By: Jon Burgum	Date 2-5-03 Time 2:30	Received By: UPS	Date	Temperature on Arrival			
			Time	On Ice _____	5.6 Degrees Celsius		

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-1 10.2'
Laboratory ID #: 022478-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/17/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1.2-Tetrachloroethane	3.0	BDL
1,1,1-Trichloroethane	2.5	BDL
1,1,2,2-Tetrachloroethane	3.0	BDL
1,1,2-Trichloroethane	2.5	BDL
1,1-Dichloroethane	2.5	BDL
1,1-Dichloroethene	15.0	BDL
1,1-Dichloropropene	2.5	BDL
1,2,3-Trichlorobenzene	2.0	BDL
1,2,3-Trichloropropane	4.0	BDL
1,2,4-Trichlorobenzene	1.5	BDL
1,2,4-Trimethylbenzene	1.0	725.0
1,2-Dibromo-3-chloropropane	3.5	BDL
1,2-Dibromoethane	25.0	BDL
1,2-Dichlorobenzene	1.0	BDL
1,2-Dichloroethane	3.0	BDL
1,2-Dichloropropane	3.0	BDL
1,3,5-Trimethylbenzene	1.0	BDL
1,3-Dichlorobenzene	1.0	BDL
1,3-Dichloropropane	2.5	BDL

Laboratory Manager. Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-1 10.2'
Laboratory ID #: 022478-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/17/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	4.0	BDL
2,2-Dichloropropane	5.0	BDL
2-Chlorotoluene	10.0	BDL
4-Chlorotoluene	5.0	BDL
Acetone	100.0	BDL
Allyl Chloride	5.0	BDL
Benzene	0.50	1254.0
Bromobenzene	1.0	BDL
Bromochloromethane	5.0	BDL
Bromodichloromethane	3.5	BDL
Bromoform	25.0	BDL
Bromomethane	65.0	BDL
Carbon Tetrachloride	3.5	BDL
Chlorobenzene	1.0	BDL
Chloroethane	35.0	BDL
Chloroform	2.5	BDL
Chloromethane	25.0	BDL
cis-1,2-Dichloroethene	1.5	BDL
cis-1,3-Dichloropropene	1.0	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-1 10.2'
Laboratory ID #: 022478-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/17/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	3.0	BDL
Dibromomethane	30.0	BDL
Dichlorodifluoromethane	20.0	BDL
Dichlorofluoromethane	45.0	BDL
Ethyl Ether	15.0	BDL
Ethylbenzene	0.50	763.0
Hexachlorobutadiene	2.5	BDL
Isopropylbenzene	1.0	BDL
m,p-Xylene	1.0	2455.0
Methyl Ethyl Ketone	100.0	BDL
Methyl Isobutyl Ketone	25.0	BDL
Methyl Tertiary Butyl Ether	20.0	BDL
Methylene Chloride	2.0	BDL
n-Butylbenzene	1.0	BDL
n-Propylbenzene	1.0	BDL
Naphthalene	3.5	1265.0
o-Xylene	1.0	1229.0
p-Isopropyltoluene	1.0	BDL
sec-Butylbenzene	1.5	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-1 10.2'
Laboratory ID #: 022478-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/17/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	10.0	BDL
tert-Butylbenzene	1.0	BDL
Tetrachloroethene	1.5	BDL
Tetrahydrofuran	60.0	BDL
Toluene	0.50	4798.0
trans-1, 3-Dichloropropene	0.50	BDL
trans-1,2-Dichloroethene	1.5	BDL
Trichloroethene	1.0	BDL
Trichlorofluoromethane	25.0	BDL
Trichlorotrifluoroethane	5.0	BDL
Vinyl Chloride	5.0	BDL
%Dibromofluoromethane Recovery		125.0
%Toluene-d8 Recovery		102.0
%4-Bromofluorobenzene Recovery		99.0

Laboratory Manager. Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-2 9.7'
Laboratory ID #: 022478-02
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/19/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	336.0
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	100.0
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

Laboratory Manager Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-2 9.7'
Laboratory ID #: 022478-02
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/19/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-2 9.7'
Laboratory ID #: 022478-02
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/19/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	66.0
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	7.0
m,p-Xylene	0.020	555.0
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	11.0
Naphthalene	0.070	75.0
o-Xylene	0.020	206.0
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-2 9.7'
Laboratory ID #: 022478-02
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/19/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	98.0
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		94.0
%Toluene-d8 Recovery		100.0
%4-Bromofluorobenzene Recovery		103.0

Laboratory Manager. Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-3 12.85'
Laboratory ID #: 022478-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/18/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.30	BDL
1,1,1-Trichloroethane	0.25	BDL
1,1,2,2-Tetrachloroethane	0.30	BDL
1,1,2-Trichloroethane	0.25	BDL
1,1-Dichloroethane	0.25	BDL
1,1-Dichloroethene	1.5	BDL
1,1-Dichloropropene	0.25	BDL
1,2,3-Trichlorobenzene	0.20	BDL
1,2,3-Trichloropropane	0.40	BDL
1,2,4-Trichlorobenzene	0.15	BDL
1,2,4-Trimethylbenzene	0.10	2338.0
1,2-Dibromo-3-chloropropane	0.35	BDL
1,2-Dibromoethane	2.5	BDL
1,2-Dichlorobenzene	0.10	BDL
1,2-Dichloroethane	0.30	BDL
1,2-Dichloropropane	0.30	BDL
1,3,5-Trimethylbenzene	0.10	1008.0
1,3-Dichlorobenzene	0.10	BDL
1,3-Dichloropropane	0.25	BDL

Laboratory Manager: Bassam Youssef

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-3 12.85'
Laboratory ID #: 022478-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/18/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.40	BDL
2,2-Dichloropropane	0.50	BDL
2-Chlorotoluene	1.0	BDL
4-Chlorotoluene	0.50	BDL
Acetone	10.0	BDL
Allyl Chloride	0.50	BDL
Benzene	0.050	101.0
Bromobenzene	0.10	BDL
Bromochloromethane	0.50	BDL
Bromodichloromethane	0.35	BDL
Bromoform	2.5	BDL
Bromomethane	6.5	BDL
Carbon Tetrachloride	0.35	BDL
Chlorobenzene	0.10	BDL
Chloroethane	3.5	BDL
Chloroform	0.25	BDL
Chloromethane	2.5	BDL
cis-1,2-Dichloroethene	0.15	BDL
cis-1,3-Dichloropropene	0.10	BDL

Laboratory Manager: Bassam Koussef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-3 12.85'
Laboratory ID #: 022478-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/18/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.30	BDL
Dibromomethane	3.0	BDL
Dichlorodifluoromethane	2.0	BDL
Dichlorofluoromethane	4.5	BDL
Ethyl Ether	1.5	BDL
Ethylbenzene	0.050	1259.0
Hexachlorobutadiene	0.25	BDL
Isopropylbenzene	0.10	144.0
m,p-Xylene	0.10	4825.0
Methyl Ethyl Ketone	10.0	BDL
Methyl Isobutyl Ketone	2.5	BDL
Methyl Tertiary Butyl Ether	2.0	BDL
Methylene Chloride	0.20	BDL
n-Butylbenzene	0.10	BDL
n-Propylbenzene	0.10	488.0
Naphthalene	0.35	825.0
o-Xylene	0.10	2232.0
p-Isopropyltoluene	0.10	BDL
sec-Butylbenzene	0.15	BDL

Laboratory Manager Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-3 12.85'
Laboratory ID #: 022478-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/18/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	1.0	BDL
tert-Butylbenzene	0.10	BDL
Tetrachloroethene	0.15	BDL
Tetrahydrofuran	6.0	BDL
Toluene	0.050	4696.0
trans-1, 3-Dichloropropene	0.050	BDL
trans-1,2-Dichloroethene	0.15	BDL
Trichloroethene	0.10	BDL
Trichlorofluoromethane	2.5	BDL
Trichlorotrifluoroethane	0.50	BDL
Vinyl Chloride	0.50	BDL
%Dibromofluoromethane Recovery		93.0
%Toluene-d8 Recovery		94.0
%4-Bromofluorobenzene Recovery		111.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-4 10.2'
Laboratory ID #: 022478-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/18/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	1.5	BDL
1,1,1-Trichloroethane	1.3	BDL
1,1,2,2-Tetrachloroethane	1.5	BDL
1,1,2-Trichloroethane	1.3	BDL
1,1-Dichloroethane	1.3	BDL
1,1-Dichloroethene	7 5	BDL
1,1-Dichloropropene	1.3	BDL
1,2,3-Trichlorobenzene	1.0	BDL
1,2,3-Trichloropropane	2.0	BDL
1,2,4-Trichlorobenzene	0.75	BDL
1,2,4-Trimethylbenzene	0.50	6246.0
1,2-Dibromo-3-chloropropane	1.8	BDL
1,2-Dibromoethane	12.5	BDL
1,2-Dichlorobenzene	0.50	BDL
1,2-Dichloroethane	1.5	BDL
1,2-Dichloropropane	1.5	BDL
1,3,5-Trimethylbenzene	0 50	1960.0
1,3-Dichlorobenzene	0.50	BDL
1,3-Dichloropropane	1.3	BDL

Laboratory Manager, Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Cotcau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-4 10.2'
Laboratory ID #: 022478-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/18/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	2.0	BDL
2,2-Dichloropropane	2.5	BDL
2-Chlorotoluene	5.0	BDL
4-Chlorotoluene	2.5	BDL
Acetone	50.0	BDL
Allyl Chloride	2.5	BDL
Benzene	0.25	209.0
Bromobenzene	0.50	BDL
Bromochloromethane	2.5	BDL
Bromodichloromethane	1.8	BDL
Bromoform	12.5	BDL
Bromomethane	32.5	BDL
Carbon Tetrachloride	1.8	BDL
Chlorobenzene	0.50	BDL
Chloroethane	17.5	BDL
Chloroform	1.3	BDL
Chloromethane	12.5	BDL
cis-1,2-Dichloroethene	0.75	BDL
cis-1,3-Dichloropropene	0.50	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-4 10.2'
Laboratory ID #: 022478-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 6/18/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	1.5	BDL
Dibromomethane	15.0	BDL
Dichlorodifluoromethane	10.0	BDL
Dichlorofluoromethane	22.5	BDL
Ethyl Ether	7.5	BDL
Ethylbenzene	0.25	2686.0
Hexachlorobutadiene	1.3	BDL
Isopropylbenzene	0.50	227.0
m,p-Xylene	0.50	11513.0
Methyl Ethyl Ketone	50.0	BDL
Methyl Isobutyl Ketone	12.5	BDL
Methyl Tertiary Butyl Ether	10.0	BDL
Methylene Chloride	1.0	BDL
n-Butylbenzene	0.50	BDL
n-Propylbenzene	0.50	915.0
Naphthalene	1.8	2940.0
o-Xylene	0.50	4515.0
p-Isopropyltoluene	0.50	BDL
sec-Butylbenzene	0.75	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: B-4 10 2'
Laboratory ID # 022478-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis 6/18/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	5.0	BDL
tert-Butylbenzene	0.50	BDL
Tetrachloroethene	0.75	BDL
Tetrahydrofuran	30.0	BDL
Toluene	0.25	9054.0
trans-1, 3-Dichloropropene	0.25	BDL
trans-1,2-Dichloroethene	0.75	BDL
Trichloroethene	0.50	BDL
Trichlorofluoromethane	12.5	BDL
Trichlorotrifluoroethane	2.5	BDL
Vinyl Chloride	2.5	BDL
%Dibromofluoromethane Recovery		84.0
%Toluene-d8 Recovery		90.0
%4-Bromofluorobenzene Recovery		105.0

Laboratory Manager. Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

June 19, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 6/13/02
Date Received: 6/17/02
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: WI Mod.
Units: ug/l
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	022478-01	022478-02	022478-03	022478-04
Client Sample ID:	B-1 10.2'	B-2 9.7'	B-3 12.85'	B-4 10.2'
Detection Limit (ug/l)	100.0	100.0	100.0	100.0
Date Analyzed:	6/17/02	6/17/02	6/18/02	6/17/02
TPH-GRO	44993.0	4211.0	350157.0	338583.0
% Surrogate Recovery	82.0	140.0	92.0	96.0

Laboratory Manager: Bassam Youssef

SUMMIT ENVIRONMENTAL TECHNOLOGIES, INC.
595 EAST TALLMADGE AVENUE
AKRON, OHIO 44310
TEL: 330/253-8211; FAX: 330/253-4489

CHAIN OF CUSTODY

A2LA CERTIFICATION #: 0724-01

s.e.t.

PROJECT NAME: K-C Kwik Stop PROJECT LOCATION Bryceton, MN PO#: K-C Kwik Stop

CLIENT NAME Cateau Environmental CLIENT ADDRESS 3930 Sunnybrook Drive NW ; Alexandria, MN 56308

CONTACT PERSON: Nate Hunke PHONE # (320) 846-4668 FAX # (605) 882-4152 SAMPLED BY: GML

#	SAMPLE ID#	MEDIA	TIME	DATE	BTEX 8020	GRO 8015M	DRO 8015M	~~TPH~~ VOC's ~~HBS~~	TCLP METALS	TCLP VOCS	TCLP BNAS	TCLP PEST/HERB	OTHERS
1	B-1 (10.2 Ft)	Water		6-13-02		✓		✓					VOC's - Use MDH465F-mc
2	B-2 (9.7 Ft.)			6-13-02		✓		✓					
3	B-3 (12.85 Ft.)			6-13-02		✓		✓					
4	B-4 (10.2 Ft.)	↓		6-13-02		✓		✓					

022478.01.04

SPECIAL INSTRUCTIONS:

RELINQUISHED BY: Cindy Schmidt DATE: 6-14-02 RECEIVED BY: DATE:

RECEIVED AT THE LAB BY: Jeff DATE: 6/17/02 9:45

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-01
Laboratory ID #: 023416-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-01
Laboratory ID #: 023416-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0 10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-01
Laboratory ID #: 023416-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-01
Laboratory ID #: 023416-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		96.0
%Toluene-d8 Recovery		95.0
%4-Bromofluorobenzene Recovery		89.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected:	8/12/02
Date Received:	8/16/02
Project #:	K-C Kwik Stop
Client ID #:	See Below
Laboratory ID #:	See Below
Matrix:	Liquid
Method:	WI Mod.
Units:	ug/l
Analyst:	MS
Detection Limit:	See Below
Date of Analysis:	See Below

Lab Sample ID:	023416-01
Client Sample ID:	MW-01
Detection Limit (ug/l)	100.0
Date Analyzed:	8/16/02
TPH-GRO	<100.0
% Surrogate Recovery	102.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: 8021
Units: ug/L
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	023416-02
Client Sample ID:	MW-06
Detection Limit (ug/L)	1.0
Date Analyzed:	8/16/02
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylene	<1.0
% Surrogate Recovery	100.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-02
Laboratory ID #: 023416-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-02
Laboratory ID #: 023416-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-02
Laboratory ID #: 023416-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0 020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-02
Laboratory ID #: 023416-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		103.0
%Toluene-d8 Recovery		94.0
%4-Bromofluorobenzene Recovery		93.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-03
Laboratory ID #: 023416-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/19/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-03
Laboratory ID #: 023416-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/19/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-03
Laboratory ID #: 023416-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/19/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-03
Laboratory ID #: 023416-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/19/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		110.0
%Toluene-d8 Recovery		85.0
%4-Bromofluorobenzene Recovery		97.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-04
Laboratory ID #: 023416-05
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-04
Laboratory ID #: 023416-05
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Cotcau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-04
Laboratory ID #: 023416-05
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-04
Laboratory ID #: 023416-05
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		99.0
%Toluene-d8 Recovery		93.0
%4-Bromofluorobenzene Recovery		98.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-05
Laboratory ID #: 023416-06
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.60	BDL
1,1,1-Trichloroethane	0.50	BDL
1,1,2,2-Tetrachloroethane	0.60	BDL
1,1,2-Trichloroethane	0.50	BDL
1,1-Dichloroethane	0.50	BDL
1,1-Dichloroethene	3.0	BDL
1,1-Dichloropropene	0.50	BDL
1,2,3-Trichlorobenzene	0.40	BDL
1,2,3-Trichloropropane	0.80	BDL
1,2,4-Trichlorobenzene	0.30	BDL
1,2,4-Trimethylbenzene	0.20	373.0
1,2-Dibromo-3-chloropropane	0.70	BDL
1,2-Dibromoethane	5.0	BDL
1,2-Dichlorobenzene	0.20	BDL
1,2-Dichloroethane	0.60	BDL
1,2-Dichloropropane	0.60	BDL
1,3,5-Trimethylbenzene	0.20	107.0
1,3-Dichlorobenzene	0.20	BDL
1,3-Dichloropropane	0.50	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Cotcau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-05
Laboratory ID #: 023416-06
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.80	BDL
2,2-Dichloropropane	1.0	BDL
2-Chlorotoluene	2.0	BDL
4-Chlorotoluene	1.0	BDL
Acetone	20.0	910.0
Allyl Chloride	1.0	BDL
Benzene	0.10	503.0
Bromobenzene	0.20	BDL
Bromochloromethane	1.0	BDL
Bromodichloromethane	0.70	BDL
Bromoform	5.0	BDL
Bromomethane	13.0	BDL
Carbon Tetrachloride	0.70	BDL
Chlorobenzene	0.20	BDL
Chloroethane	7.0	BDL
Chloroform	0.50	BDL
Chloromethane	5.0	BDL
cis-1,2-Dichloroethene	0.30	BDL
cis-1,3-Dichloropropene	0.20	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-05
Laboratory ID #: 023416-06
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.60	BDL
Dibromomethane	6.0	BDL
Dichlorodifluoromethane	4.0	BDL
Dichlorofluoromethane	9.0	BDL
Ethyl Ether	3.0	BDL
Ethylbenzene	0.10	347.0
Hexachlorobutadiene	0.50	BDL
Isopropylbenzene	0.20	BDL
m,p-Xylene	0.20	1154.0
Methyl Ethyl Ketone	20.0	BDL
Methyl Isobutyl Ketone	5.0	BDL
Methyl Tertiary Butyl Ether	4.0	BDL
Methylene Chloride	0.40	BDL
n-Butylbenzene	0.20	BDL
n-Propylbenzene	0.20	BDL
Naphthalene	0.70	281.0
o-Xylene	0.20	709.0
p-Isopropyltoluene	0.20	BDL
sec-Butylbenzene	0.30	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: MW-05
Laboratory ID #: 023416-06
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 8/16/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	2.0	BDL
tert-Butylbenzene	0.20	BDL
Tetrachloroethene	0.30	BDL
Tetrahydrofuran	12.0	BDL
Toluene	0.10	1187.0
trans-1, 3-Dichloropropene	0.10	BDL
trans-1,2-Dichloroethene	0.30	BDL
Trichloroethene	0.20	BDL
Trichlorofluoromethane	5.0	BDL
Trichlorotrifluoroethane	1.0	BDL
Vinyl Chloride	1.0	BDL
%Dibromofluoromethane Recovery		107.0
%Toluene-d8 Recovery		95.0
%4-Bromofluorobenzene Recovery		94.0

Laboratory Manager. Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: WI Mod.
Units: ug/l
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	023416-03	023416-04	023416-05	023416-06
Client Sample ID:	MW-02	MW-03	MW-04	MW-05
Detection Limit (ug/l)	100.0	100.0	100.0	100.0
Date Analyzed:	8/16/02	8/16/02	8/16/02	8/16/02
TPH-GRO	<100.0	<100.0	288.0	13919.0
% Surrogate Recovery	104.0	108.0	126.0	108.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

August 20, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 8/12/02
Date Received: 8/16/02
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: 8021
Units: ug/L
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

	Lab Sample ID: 023416-07
	Client Sample ID: Trip Blank
	Detection Limit (ug/L) 1.0
	Date Analyzed: 8/16/02
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylene	<1.0
% Surrogate Recovery	100.0

Laboratory Manager: Bassam Youssef

Summit Environmental Technologies, Inc.
595 East Tallmadge Avenue
Akron, Ohio 44310 Tel: 330.253.8211 Fax: 330.253.4489

Analysis Request/Chain of Custody

For Summit Environmental Technologies, Inc. use only

Page _____ of _____.

SET No. 023416.01.07

Client Name	Project Name
COTEAU ENVIRONMENTAL	KC'S KWIK STOP
Client Address	**Project Address**
3930 SUNNYBROOK DR NW ALEXANDRIA, MN 56308	BROOTEN, MN
Client Phone No. 320-846-4668	**Report to** COTEAU ENVIRONMENTAL
Client Fax No. 605-882-4152 **Please Fax Results** ✓	**PO #**
Contact Person NATE HUNKE	**Quote No.**
Sampled by SDH	**Check if Ohio VAP samples** ✓

#	Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: S=Solid, L=Liquid, O=Oil SL=Sludge, A=Air	Preservative	Number of Containers	Analytical Parameters and Methods: BTEX	VOC's	TPH-GRO
1	MW-01	8/12/02	1537	✓						✓	✓
2	MW-06		1545	✓					✓		
3	MW-02		1624	✓						✓	✓
4	MW-03		1719	✓						✓	✓
5	MW-04		1818	✓						✓	✓
6	MW-05 (RECORD)		1907	✓						✓	✓
	TRIP BLANK - PLEASE LOG TRIP BLANK FOR BOTH SITES								✓		

Relinquished by:	Date	Time	Received by:	Date	Time
	8/13/02	1630		8/13/02	1630
	8/14/02	9:00AM	UPS		

Received in lab by:	Date	Time
	8/15/02	10:00

Rush Requested: _____ **Days**
Must be approved by lab manager

Notes/Comments:

White and yellow pages should accompany samples to the laboratory The client retains the pink page

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received 11/11/02
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: WI Mod
Units: ug/l
Analyst: MS
Detection Limit: See Below
Date of Analysis. See Below

Lab Sample ID:	024927-01	024927-02	024927-03
Client Sample ID:	MW-01	MW-06	MW-02
Detection Limit (ug/l)	100.0	100.0	100.0
Date Analyzed:	11/12/02	11/12/02	11/12/02
TPH-GRO	<100.0	<100 0	<100.0
% Surrogate Recovery	110.0	116.0	114 0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-01
Laboratory ID #: 024927-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

Laboratory Manager, Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-01
Laboratory ID #: 024927-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	5.0
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	6.0
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-01
Laboratory ID #: 024927-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

Laboratory Manager, Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-01
Laboratory ID #: 024927-01
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		96.0
%Toluene-d8 Recovery		100.0
%4-Bromofluorobenzene Recovery		99.0

Laboratory Manager Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: 8021
Units: ug/L
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	024927-02
Client Sample ID:	MW-06
Detection Limit (ug/L)	1.0
Date Analyzed:	11/12/02
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylene	<1.0
% Surrogate Recovery	116.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-02
Laboratory ID #: 024927-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address. 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-02
Laboratory ID #: 024927-03
Analysis. VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

Laboratory Manager. Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-02
Laboratory ID #: 024927-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

Laboratory Manager Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address. 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected. 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-02
Laboratory ID #: 024927-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		100.0
%Toluene-d8 Recovery		98.0
%4-Bromofluorobenzene Recovery		100.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected	11/6/02
Date Received:	11/11/02
Project #:	K-C Kwik Stop
Client ID #:	See Below
Laboratory ID #:	See Below
Matrix:	Liquid
Method:	WI Mod.
Units:	ug/l
Analyst:	MS
Detection Limit:	See Below
Date of Analysis:	See Below

Lab Sample ID.	024927-04	024927-05	024927-06
Client Sample ID	MW-03	MW-04	MW-05
Detection Limit (ug/l)	100.0	100.0	100.0
Date Analyzed:	11/12/02	11/12/02	11/12/02
TPH-GRO	18550.0	186.0	56660.0
% Surrogate Recovery	122.0	132.0	132.0

Laboratory Manager Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-03
Laboratory ID #: 024927-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/14/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	6.0	BDL
1,1,1-Trichloroethane	5.0	BDL
1,1,2,2-Tetrachloroethane	6.0	BDL
1,1,2-Trichloroethane	5.0	BDL
1,1-Dichloroethane	5.0	BDL
1,1-Dichloroethene	30.0	BDL
1,1-Dichloropropene	5.0	BDL
1,2,3-Trichlorobenzene	4.0	BDL
1,2,3-Trichloropropane	8.0	BDL
1,2,4-Trichlorobenzene	3.0	BDL
1,2,4-Trimethylbenzene	2.0	1011.0
1,2-Dibromo-3-chloropropane	7.0	BDL
1,2-Dibromoethane	50.0	BDL
1,2-Dichlorobenzene	2.0	BDL
1,2-Dichloroethane	6.0	BDL
1,2-Dichloropropane	6.0	BDL
1,3,5-Trimethylbenzene	2.0	BDL
1,3-Dichlorobenzene	2.0	BDL
1,3-Dichloropropane	5.0	BDL

Laboratory Manager, Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-03
Laboratory ID #: 024927-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis 11/14/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	8.0	BDL
2,2-Dichloropropane	10.0	BDL
2-Chlorotoluene	20.0	BDL
4-Chlorotoluene	10.0	BDL
Acetone	200.0	BDL
Allyl Chloride	10.0	BDL
Benzene	1.0	728.0
Bromobenzene	2.0	BDL
Bromochloromethane	10.0	BDL
Bromodichloromethane	7.0	BDL
Bromoform	50.0	BDL
Bromomethane	130.0	BDL
Carbon Tetrachloride	7.0	BDL
Chlorobenzene	2.0	BDL
Chloroethane	70.0	BDL
Chloroform	5.0	BDL
Chloromethane	50.0	BDL
cis-1,2-Dichloroethene	3.0	BDL
cis-1,3-Dichloropropene	2.0	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-03
Laboratory ID #: 024927-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/14/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	6.0	BDL
Dibromomethane	60.0	BDL
Dichlorodifluoromethane	40.0	BDL
Dichlorofluoromethane	90.0	BDL
Ethyl Ether	30.0	BDL
Ethylbenzene	1.0	1011.0
Hexachlorobutadiene	5.0	BDL
Isopropylbenzene	2.0	BDL
m,p-Xylene	2.0	3410.0
Methyl Ethyl Ketone	200.0	BDL
Methyl Isobutyl Ketone	50.0	BDL
Methyl Tertiary Butyl Ether	40.0	BDL
Methylene Chloride	4.0	BDL
n-Butylbenzene	2.0	BDL
n-Propylbenzene	2.0	BDL
Naphthalene	7.0	917.0
o-Xylene	2.0	1257.0
p-Isopropyltoluene	2.0	BDL
sec-Butylbenzene	3.0	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-03
Laboratory ID #: 024927-04
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/14/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	20.0	BDL
tert-Butylbenzene	2.0	BDL
Tetrachloroethene	3.0	BDL
Tetrahydrofuran	120.0	BDL
Toluene	1.0	3111.0
trans-1, 3-Dichloropropene	1.0	BDL
trans-1,2-Dichloroethene	3.0	BDL
Trichloroethene	2.0	BDL
Trichlorofluoromethane	50.0	BDL
Trichlorotrifluoroethane	10.0	BDL
Vinyl Chloride	10.0	BDL
%Dibromofluoromethane Recovery		99.0
%Toluene-d8 Recovery		92.0
%4-Bromofluorobenzene Recovery		97.0

Laboratory Manager, Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-04
Laboratory ID # 024927-05
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address. 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received. 11/11/02
Project #: K-C Kwik Stop
Client ID #. MW-04
Laboratory ID #: 024927-05
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis. 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

Laboratory Manager. Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-04
Laboratory ID #: 024927-05
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client Coteau Environmental
Address. 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-04
Laboratory ID #. 024927-05
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/12/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0 20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1 2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0 10	BDL
%Dibromofluoromethane Recovery		98.0
%Toluene-d8 Recovery		100 0
%4-Bromofluorobenzene Recovery		103.0

Laboratory Manager. Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-05
Laboratory ID #: 024927-06
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis 11/14/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.60	BDL
1,1,1-Trichloroethane	0.50	BDL
1,1,2,2-Tetrachloroethane	0.60	BDL
1,1,2-Trichloroethane	0.50	BDL
1,1-Dichloroethane	0.50	BDL
1,1-Dichloroethene	3.0	BDL
1,1-Dichloropropene	0.50	BDL
1,2,3-Trichlorobenzene	0.40	BDL
1,2,3-Trichloropropane	0.80	BDL
1,2,4-Trichlorobenzene	0.30	BDL
1,2,4-Trimethylbenzene	0.20	866.0
1,2-Dibromo-3-chloropropane	0.70	BDL
1,2-Dibromoethane	5.0	BDL
1,2-Dichlorobenzene	0.20	BDL
1,2-Dichloroethane	0.60	BDL
1,2-Dichloropropane	0.60	BDL
1,3,5-Trimethylbenzene	0.20	254.0
1,3-Dichlorobenzene	0.20	BDL
1,3-Dichloropropane	0.50	BDL

Laboratory Manager Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-05
Laboratory ID #: 024927-06
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/14/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.80	BDL
2,2-Dichloropropane	1.0	BDL
2-Chlorotoluene	2.0	BDL
4-Chlorotoluene	1.0	BDL
Acetone	20.0	BDL
Allyl Chloride	1.0	BDL
Benzene	0.10	1167.0
Bromobenzene	0.20	BDL
Bromochloromethane	1.0	BDL
Bromodichloromethane	0.70	BDL
Bromoform	5.0	BDL
Bromomethane	13.0	BDL
Carbon Tetrachloride	0.70	BDL
Chlorobenzene	0.20	BDL
Chloroethane	7.0	BDL
Chloroform	0.50	BDL
Chloromethane	5.0	BDL
cis-1,2-Dichloroethene	0.30	BDL
cis-1,3-Dichloropropene	0.20	BDL

Laboratory Manager, Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected 11/6/02
Date Received 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-05
Laboratory ID #: 024927-06
Analysis. VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 11/14/02
Analyst MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.60	BDL
Dibromomethane	6.0	BDL
Dichlorodifluoromethane	4.0	BDL
Dichlorofluoromethane	9.0	BDL
Ethyl Ether	3.0	BDL
Ethylbenzene	0.10	647.0
Hexachlorobutadiene	0.50	BDL
Isopropylbenzene	0.20	BDL
m,p-Xylene	0.20	2423.0
Methyl Ethyl Ketone	20.0	BDL
Methyl Isobutyl Ketone	5.0	BDL
Methyl Tertiary Butyl Ether	4.0	BDL
Methylene Chloride	0.40	BDL
n-Butylbenzene	0.20	BDL
n-Propylbenzene	0.20	110.0
Naphthalene	0.70	269.0
o-Xylene	0.20	1125.0
p-Isopropyltoluene	0.20	BDL
sec-Butylbenzene	0.30	BDL

Laboratory Manager Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client Coteau Environmental
Address. 3930 Sunnybrook Dr NW
Alexandria, MN 56308

Date Collected: 11/6/02
Date Received: 11/11/02
Project #: K-C Kwik Stop
Client ID #: MW-05
Laboratory ID #: 024927-06
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis. 11/14/02
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	2.0	BDL
tert-Butylbenzene	0.20	BDL
Tetrachloroethene	0.30	BDL
Tetrahydrofuran	12.0	BDL
Toluene	0.10	5320.0
trans-1, 3-Dichloropropene	0.10	BDL
trans-1,2-Dichloroethene	0.30	BDL
Trichloroethene	0.20	BDL
Trichlorofluoromethane	5.0	BDL
Trichlorotrifluoroethane	1.0	BDL
Vinyl Chloride	1.0	BDL
%Dibromofluoromethane Recovery		106.0
%Toluene-d8 Recovery		99.0
%4-Bromofluorobenzene Recovery		98.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

November 18, 2002

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected	11/6/02
Date Received	11/11/02
Project #:	K-C Kwik Stop
Client ID #:	See Below
Laboratory ID #:	See Below
Matrix:	Liquid
Method:	8021
Units:	ug/L
Analyst.	MS
Detection Limit	See Below
Date of Analysis.	See Below

Lab Sample ID:	024927-07
Client Sample ID:	Trip Blank
Detection Limit (ug/L)	1.0
Date Analyzed	11/12/02
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylene	<1.0
% Surrogate Recovery	96.0

Laboratory Manager. Bassam Youssef

ENVIRONMENTAL TECHNOLOGIES, INC.
TALLMADGE AVENUE
)HIO 44310
:53-8211; FAX: 330/253-4489

CHAIN OF CUSTODY

A2LA CERTIFICATION #: 0724-01

s.e.t.

ME: KC KWIK STOP PROJECT LOCATION: BROOTEN, MN PO#: KC KWIK STOP

ME: COTEAU ENVIRONMENTAL CLIENT ADDRESS: 3930 SUNNY BROOK DR NW ALEXANDIA, MN 56308

ERSON: NATE HUNKE PHONE #: 320-846-4668 FAX #: 605-882-4152 SAMPLED BY: SDH

MPLE ID#	MEDIA	TIME	DATE	BTEX 8020	TPH- GRO ~~8015M~~	VOC'S ~~DRO~~ 8015M	TPH 418.1	TCLP METALS	TCLP VOCS	TCLP BNAS	TCLP PEST/HERB	OTHERS
2-01	WATER		11/6/02		✓	✓						
06	↓		↓	✓	✓							
02					✓	✓						
03					✓	✓						
04					✓	✓						
05					✓	✓						
TRIP BLANK	↓			✓								

024927-01
-07

RUCTIONS:

D BY: Scott DATE: 11/7/02 RECEIVED BY: DATE:

THE LAB BY: D. J. Miller DATE: 11/11/02 9:30

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

March 10, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 2/27/03
Date Received: 2/28/03
Project #: K-C Kwik Stop
Client ID #: MW-06
Laboratory ID #: 031026-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 3/3/03
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

March 10, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 2/27/03
Date Received: 2/28/03
Project #: K-C Kwik Stop
Client ID #: MW-06
Laboratory ID #: 031026-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 3/3/03
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

March 10, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 2/27/03
Date Received: 2/28/03
Project #: K-C Kwik Stop
Client ID #: MW-06
Laboratory ID #: 031026-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 3/3/03
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

March 10, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 2/27/03
Date Received: 2/28/03
Project #: K-C Kwik Stop
Client ID #: MW-06
Laboratory ID #: 031026-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 3/3/03
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		128.0
%Toluene-d8 Recovery		101.0
%4-Bromofluorobenzene Recovery		102.0

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

March 10, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 2/27/03
Date Received: 2/28/03
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: 8021
Units: ug/L
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	031026-01	031026-02	031026-04
Client Sample ID:	MW-01	MW-02	MW-04
Detection Limit (ug/L)	1.0	1.0	1.0
Date Analyzed:	3/3/03	3/3/03	3/4/03
Benzene	<1.0	<1.0	9.4
Toluene	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0
Total Xylene	<1.0	<1.0	<1.0
% Surrogate Recovery	88.0	86.0	118.0

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

March 10, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 2/27/03
Date Received: 2/28/03
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: WI Mod.
Units: ug/l
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	031026-01	031026-02	031026-03	031026-04
Client Sample ID:	MW-01	MW-02	MW-06	MW-04
Detection Limit (ug/l)	100.0	100.0	100.0	100.0
Date Analyzed:	3/3/03	3/3/03	3/3/03	3/4/03
TPH-GRO	<100.0	<100.0	<100.0	206.0
% Surrogate Recovery	88.0	86.0	90.0	118.0

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

March 10, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 2/27/03
Date Received: 2/28/03
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: 8021
Units: ug/L
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	031026-05	031026-06	031026-07	031026-08
Client Sample ID:	MW-08	MW-03	MW-05	Trip Blank
Detection Limit (ug/L)	1.0	5.0	100.0	1.0
Date Analyzed:	3/4/03	3/4/03	3/8/03	3/4/03
Benzene	9.0	349.0	4888.0	<1.0
Toluene	<1.0	307.0	13065.0	<1.0
Ethylbenzene	<1.0	655.0	1165.0	<1.0
Total Xylene	<1.0	1790.0	9325.0	<1.0
% Surrogate Recovery	118.0	106.0	116.0	84.0

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

March 10, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 2/27/03
Date Received: 2/28/03
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: WI Mod.
Units: ug/l
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

	Lab Sample ID:	031026-06	031026-07
	Client Sample ID:	MW-03	MW-05
	Detection Limit (ug/l)	100.0	100.0
	Date Analyzed:	3/4/03	3/8/03
TPH-GRO		7101.0	54146.0
% Surrogate Recovery		106.0	116.0

Summit Environmental Technologies, Inc.
595 East Tallmadge Avenue
Akron, Ohio 44310 Tel: 330.253.8211 Fax: 330.253.4489

Analysis Request/Chain of Custody

For Summit Environmental Technologies, Inc. use only

Page _____ of _____.

SET No.

03/026-01 08

Name: COTEAM ENVIRONMENTAL	Project Name: KC KWIK STOP
Address: 30 SUNNYBROOK DR NE EXANDRIA, MN 56308	Project Address: BROOTEN, MN
Phone No: (320) 846-4668	Report to: COTEAM
Fax No: (605) 886-4152	Please Fax Results ✓ ✓
Person: NATE	PO #
By: SDY	Quote No.
	Check if Ohio VAP samples ✓ ☐

Analytical Parameters and Methods

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: S=Solid, L=Liquid, O=Oil, SL=Sludge, A=Air	Preservative	Number of Containers	BTEX	TPH-GRO	~~TPH-DRO~~	VOC's					
MW-01	2/27/03	0745	✓			YES	2	✓	✓							
02		0827	✓				2	✓	✓							
06		0913	✓				2		✓		✓					
04		1003	✓				2	✓	✓							
08		1010	✓				2	✓								
03		1043	✓				2	✓	✓							
05		1120	✓				2	✓	✓							
TRIP/TEMP BLANK							2	✓								

Relinquished by:	Date	Time	Received by:	Date	Time
	2/27/03	1730			
Received in lab by:	Date	Time	Rush Requested: _____ Days Must be approved by lab manager		
	2/28/03	945			

Notes/Comments:

White and yellow pages should accompany samples to the laboratory. The client retains the pink page.

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: 8021
Units: ug/L
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	032392-01	032392-02	032392-04	032392-05
Client Sample ID:	MW-01	MW-02	MW-07	MW-04
Detection Limit (ug/L)	1.0	1.0	1.0	1.0
Date Analyzed:	5/6/2003	5/6/2003	5/6/2003	5/6/2003
Benzene	<1.0	<1.0	<1.0	5.0
Toluene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0
Total Xylene	<1.0	<1.0	<1.0	<1.0
% Surrogate Recovery	90.0	88.0	88.0	102.0

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: 8021
Units: ug/L
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	032392-06	032392-07	032392-08
Client Sample ID:	MW-03	MW-05	Trip Blank
Detection Limit (ug/L)	5.0	100.0	1.0
Date Analyzed:	5/7/2003	5/8/2003	5/6/2003
Benzene	201.0	2566.0	<1.0
Toluene	424.0	12436.0	<1.0
Ethylbenzene	493.0	1089.0	<1.0
Total Xylene	1522.0	5809.0	<1.0
% Surrogate Recovery	90.0	82.0	82.0

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: WI Mod
Units: ug/l
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

Lab Sample ID:	032392-01	032392-02	032392-03	032392-04
Client Sample ID:	MW-01	MW-02	MW-06	MW-07
Detection Limit (ug/l)	100.0	100.0	100.0	100.0
Date Analyzed:	5/6/2003	5/6/2003	5/6/2003	5/6/2003
TPH-GRO	<100.0	<100.0	<100.0	<100.0
% Surrogate Recovery	90.0	88.0	88.0	88.0

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #: See Below
Laboratory ID #: See Below
Matrix: Liquid
Method: WI Mod
Units: ug/l
Analyst: MS
Detection Limit: See Below
Date of Analysis: See Below

	Lab Sample ID:	032392-05	032392-06	032392-07
	Client Sample ID:	MW-04	MW-03	MW-05
	Detection Limit (ug/l)	100.0	100.0	100.0
	Date Analyzed:	5/6/2003	5/7/2003	5/8/2003
TPH-GRO		<100.0	5827.0	34537.0
% Surrogate Recovery		102.0	90.0	82.0

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #: MW-06
Laboratory ID #: 032392-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 5/6/2003
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #: MW-06
Laboratory ID #: 032392-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 5/6/2003
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #: MW-06
Laboratory ID #: 032392-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 5/6/2003
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #: MW-06
Laboratory ID #: 032392-03
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 5/6/2003
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		103.0
%Toluene-d8 Recovery		97.0
%4-Bromofluorobenzene Recovery		96.0

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #:
Laboratory ID #: 032392-09
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 5/6/2003
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,1,1,2-Tetrachloroethane	0.060	BDL
1,1,1-Trichloroethane	0.050	BDL
1,1,2,2-Tetrachloroethane	0.060	BDL
1,1,2-Trichloroethane	0.050	BDL
1,1-Dichloroethane	0.050	BDL
1,1-Dichloroethene	0.30	BDL
1,1-Dichloropropene	0.050	BDL
1,2,3-Trichlorobenzene	0.040	BDL
1,2,3-Trichloropropane	0.080	BDL
1,2,4-Trichlorobenzene	0.030	BDL
1,2,4-Trimethylbenzene	0.020	BDL
1,2-Dibromo-3-chloropropane	0.070	BDL
1,2-Dibromoethane	0.50	BDL
1,2-Dichlorobenzene	0.020	BDL
1,2-Dichloroethane	0.060	BDL
1,2-Dichloropropane	0.060	BDL
1,3,5-Trimethylbenzene	0.020	BDL
1,3-Dichlorobenzene	0.020	BDL
1,3-Dichloropropane	0.050	BDL

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #:
Laboratory ID #: 032392-09
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 5/6/2003
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
1,4-Dichlorobenzene	0.080	BDL
2,2-Dichloropropane	0.10	BDL
2-Chlorotoluene	0.20	BDL
4-Chlorotoluene	0.10	BDL
Acetone	2.0	BDL
Allyl Chloride	0.10	BDL
Benzene	0.010	BDL
Bromobenzene	0.020	BDL
Bromochloromethane	0.10	BDL
Bromodichloromethane	0.070	BDL
Bromoform	0.50	BDL
Bromomethane	1.3	BDL
Carbon Tetrachloride	0.070	BDL
Chlorobenzene	0.020	BDL
Chloroethane	0.70	BDL
Chloroform	0.050	BDL
Chloromethane	0.50	BDL
cis-1,2-Dichloroethene	0.030	BDL
cis-1,3-Dichloropropene	0.020	BDL

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #:
Laboratory ID #: 032392-09
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 5/6/2003
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Dibromochloromethane	0.060	BDL
Dibromomethane	0.60	BDL
Dichlorodifluoromethane	0.40	BDL
Dichlorofluoromethane	0.90	BDL
Ethyl Ether	0.30	BDL
Ethylbenzene	0.010	BDL
Hexachlorobutadiene	0.050	BDL
Isopropylbenzene	0.020	BDL
m,p-Xylene	0.020	BDL
Methyl Ethyl Ketone	2.0	BDL
Methyl Isobutyl Ketone	0.50	BDL
Methyl Tertiary Butyl Ether	0.40	BDL
Methylene Chloride	0.040	BDL
n-Butylbenzene	0.020	BDL
n-Propylbenzene	0.020	BDL
Naphthalene	0.070	BDL
o-Xylene	0.020	BDL
p-Isopropyltoluene	0.020	BDL
sec-Butylbenzene	0.030	BDL

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

May 09, 2003

Client: Coteau Environmental
Address: 3930 Sunnybrook Dr. NW
Alexandria, MN 56308

Date Collected: 5/1/2003
Date Received: 5/5/2003
Project #: K-C Kwik Stop
Client ID #:
Laboratory ID #: 032392-09
Analysis: VOC Analysis (Method Mn DEH 465F)
Matrix: Liquid
Date of Analysis: 5/6/2003
Analyst: MS

VOC Analysis (Method Mn DEH 465F)

Parameter	Detection Limit (ug/l)	Results (ug/l)
Styrene	0.20	BDL
tert-Butylbenzene	0.020	BDL
Tetrachloroethene	0.030	BDL
Tetrahydrofuran	1.2	BDL
Toluene	0.010	BDL
trans-1, 3-Dichloropropene	0.010	BDL
trans-1,2-Dichloroethene	0.030	BDL
Trichloroethene	0.020	BDL
Trichlorofluoromethane	0.50	BDL
Trichlorotrifluoroethane	0.10	BDL
Vinyl Chloride	0.10	BDL
%Dibromofluoromethane Recovery		103.0
%Toluene-d8 Recovery		97.0
%4-Bromofluorobenzene Recovery		96.0

Summit Environmental Technologies, Inc — Analysis Request/Chain of Custody

595 East Tallmadge Avenue
Akron, Ohio 44310 Tel 330.253.8211 Fax: 330.253.4489

For Summit Environmental Technologies, Inc. use only

Page _____ of _____.

SET No

Client Name	Project Name
COLEAN ENVIRONMENTAL	KC KWIK STOP
Client Address	**Project Address**
3930 SUNNYSIDE DR NW ALEXANDRIA, MN 56308	BROOTEN, MN
Client Phone No. 320-846-4668	**Report to** COLEAN ENV.
Client Fax No. 605-882-4152 **Please Fax Results** ✓	**PO #**
Contact Person NATE	**Quote No**
Sampled by SDH	**Check if Ohio VAP samples** ✓

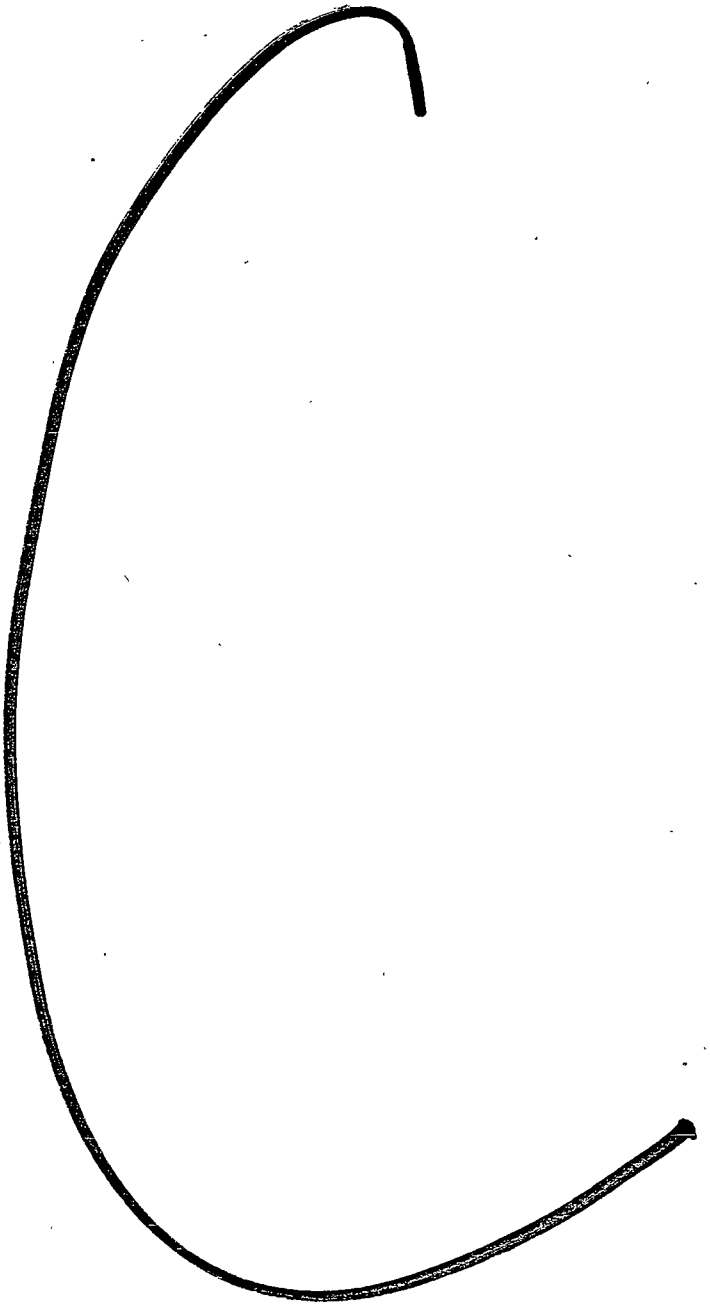
#	Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: S=Solid, L=Liquid, O=Oil SL=Sludge, A=Air	Preservative	Number of Containers	Analytical Parameters and Methods: BTEX	GRO	VOCs
1	MW-01	5/1/03	0823	✓				2	✓	✓	
2	02		0902	✓				2	✓	✓	
3	06		~~0945~~ 0948	✓				2		✓	✓
4	07		0950	✓				2	✓	✓	✓ SDH
5	04		1027	✓				2	✓	✓	
6	03		1109	✓				2	✓	✓	
7	05	↓	1145	✓				2	✓	✓	
	TRIP BLANK							2	✓		
	TEMP BLANK							1			

032392-01→08

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	5/2/03	0800			
Received in lab by:	**Date**	**Time**	**Rush Requested:** _____ Days Must be approved by lab manager		
H. Anyia	5.5.03				

Notes/Comments:

White and yellow pages should accompany samples to the laboratory. The client retains the pink page.



APPENDIX C

METHODOLOGIES AND PROCEDURES

METHODOLOGIES

Soil Borings

Soil borings will be advanced using a drilling rig and hollow-stem augers. Soil samples will be collected during drilling utilizing a 2-foot long split-barrel sampler at approximately 2-foot depth intervals. Prior to each use, the augers will be steam cleaned and the split spoon sampler will be cleaned with a detergent solution and distilled water rinse.

Soil samples collected with the split-barrel sampler will be classified in the field to characterize the lithology, depth, and vertical extent of the soil at the site. The soil samples will be classified in the field. Geologic logs of the borings indicating the depth and identification of the various soil units, water-level information, information regarding the method of maintaining and advancing the drill hole, and all other relevant information will be prepared during the drilling program. The split-spoon samples will be collected, stored and screened in accordance with the Minnesota Pollution Control Agency (MPCA).

The split-barrel sampler will be cleaned with a detergent solution and distilled water between each use and the hollow-stem augers will be steam cleaned prior to advancement of each boring. Test borings will be abandoned following completion utilizing procedures approved by the Minnesota Department of Health (MDH). Cement grout will be used to seal the borings to minimize the potential for contaminant migration along the borehole. In cases where neither ground water nor soil impacts were encountered, the borings will be abandoned utilizing drill cuttings only.

Soil Borings

The soil borings will be advanced using hydraulically driven, direct-push drilling technology. Prior to the start of drilling, all borings locations will be cleared for utilities.

Soil samples will be collected using a 1-inch diameter by 24-inch long soil sampler. Soil samples will be collected at 2.5 foot depth intervals. Prior to drilling each soil boring, all down-hole equipment will be decontaminated to prevent cross contamination. In addition, the sampler will be decontaminated during soil boring advancement to prevent cross contamination between sample intervals.

Soil samples collected with the sampler will be classified in the field to characterize the lithology, depth, and vertical extent of the soil at the site. Geologic logs of the borings indicating the

depth and identification of the various soil units, water-level information, information regarding the method of maintaining and advancing the drill hole, and all other relevant information will be prepared during the drilling program. The soil samples will be collected, stored and screened in accordance with the Minnesota Pollution Control Agency (MPCA) requirements.

Soil borings will be abandoned following completion utilizing procedures approved by the Minnesota Department of Health (MDH). If required, cement grout will be used to seal the borings to minimize the potential for contaminant migration along the borehole. In cases where neither ground water nor soil impacts were encountered, the borings will be abandoned utilizing drill cuttings only.

Ground Water Sample Collection

Ground water samples will be collected from the soil borings using a temporary well consisting of a 0.50-inch diameter, flush-threaded, PVC, Schedule 40 casing and 0.50-inch diameter, flush-threaded, PVC, Schedule 40, 10 slot screen. The PVC screen and casing are wrapped in plastic by the manufacturer, prior to shipment. New PVC casing and screen are utilized for collection of the ground water samples from each boring, or are steam cleaned prior to use, to prevent cross-contamination. The PVC casing and screen are lowered into the direct-push bore hole and the PVC screen is centered on the approximate depth of the water table. The ground water sample is collected from the temporary well by lowering a 0.25-inch I.D. tygon tubing fitted with a bottom check valve into ground water that infiltrates into the temporary well. In relatively low-permeability formations, the temporary well is left in the direct-push borehole overnight to allow for infiltration of ground water into the well for subsequent collection with the 0.25-inch I.D. tygon tubing fitted with a bottom check valve.

Monitor Well Installation

Monitor wells will be designed, constructed, maintained, and sealed in compliance with the MDH. The monitor wells will be completed by a drilling contractor licensed in the State of Minnesota.

All monitor wells will be installed using 2-inch PVC screens with appropriate slot sizes and 2-inch PVC casings. All materials used to complete the monitor wells will be sterilized and wrapped

in a protective coating by the manufacturer or will be steam cleaned at the site prior to installation. Water-table wells will be constructed with 10-foot screens placed with approximately 60% of the screen below and 40% above the water table. Monitor wells constructed with the screen entirely below the water table will be completed with 5 feet of screen. Appropriately-sized filter pack will be placed around the screen from approximately 1 foot below the base of the screen to 2 feet above the screened interval. Each monitor well will be sealed with approximately 2 feet of bentonite above the filter pack and the remaining annular space will be filled with neat cement or approved equivalent to grade. Wells completed flush with grade will be constructed with a locking, packer-type well lid, gasketed manhole cover, and cement apron that slopes away from the well. Above-grade well completions will be constructed with a locking, protective steel casing. Protective guard posts will be placed around the well where necessary in areas of heavy vehicular traffic to protect the above-grade portion of the well casing. The well casing will terminate approximately 2 feet above grade.

Monitor well construction diagrams will be completed in the field during monitor well installation. Well construction details will be submitted to the MDH after installation of the monitor wells.

All monitor wells will be surveyed following installation. The top-of-casing (TOC) elevation will be surveyed to the nearest 0.01 foot. Ground elevations will also be surveyed, to the nearest 0.1 foot. A local benchmark will be used to determine the monitor well TOC and ground elevations. The test borings and monitor wells will be given an "MW" designation, numbered in the order that they are drilled.

Monitor Well Development

Following installation, the monitor wells will be developed using a dedicated bailer, hand-operated pump or an electric submersible pump. Ground water in each monitor well will be bailed until most of the sediment is removed from the water in the well and the filter pack.

Fluid Level Monitoring

Fluid-levels in all monitor wells will be monitored using an electronic water-level indicator, steel tape or interface probe. An interface probe or chalk and paste will be used to measure fluid levels when free product exists in the well. The fluid level will be obtained by lowering the measuring

device into the well until the water surface has been encountered and by recording the distance from the top of the inside casing to the measuring device to the nearest 0.01 foot. Prior to each measurement, the fluid-level measuring device will be cleaned with alcohol and distilled water.

Hydraulic Conductivity Testing

Hydraulic-conductivity tests will be performed at monitor wells only when necessary for determination of remedial alternatives and upon approval of the MPCA. Hydraulic-conductivity testing will be conducted to determine the water-transmitting properties of the soils in the immediate vicinity of each monitor well. Hydraulic-conductivity testing will be conducted by removing water from the well using a hand pump or dedicated bailer. The water-level recovery in the monitor well will be recorded using a water level indicator or a data logger. All equipment that comes in contact with the monitor well will be cleaned prior to each test using a detergent solution and distilled water. Wells containing free product will not be tested for hydraulic conductivity.

The Bouwer and Rice, 1976, method will be used to determine the average horizontal hydraulic conductivity at each monitor well tested. This information will be utilized to estimate the average linear velocity of ground-water flow at the site.

Ground Water Sampling

Ground water sampling procedures will be conducted in accordance with the MPCA. Monitor wells will be sampled from the suspected cleanest to the most contaminated. The field protocol for monitor well sampling will consist of fluid level measurement, monitor well development, and sample collection. The fluid level will be measured in the well to the nearest 0.01 foot. Following fluid level measurement, the well volume will be calculated and a minimum of 3 to 5 well casing volumes will be removed from the well prior to sampling using a dedicated stainless-steel or polyethylene bailer. Well stabilization data may be recorded during purging in the form of temperature, pH and electrical conductivity. Following sample collection, the samples will be shipped to a specified laboratory following appropriate documentation, preservation, and chain of custody procedures. Data collected during the sampling procedure will be documented in the field. All equipment utilized during sample collection will be cleaned with alcohol and deionized water.

Free-Phase Product Removal

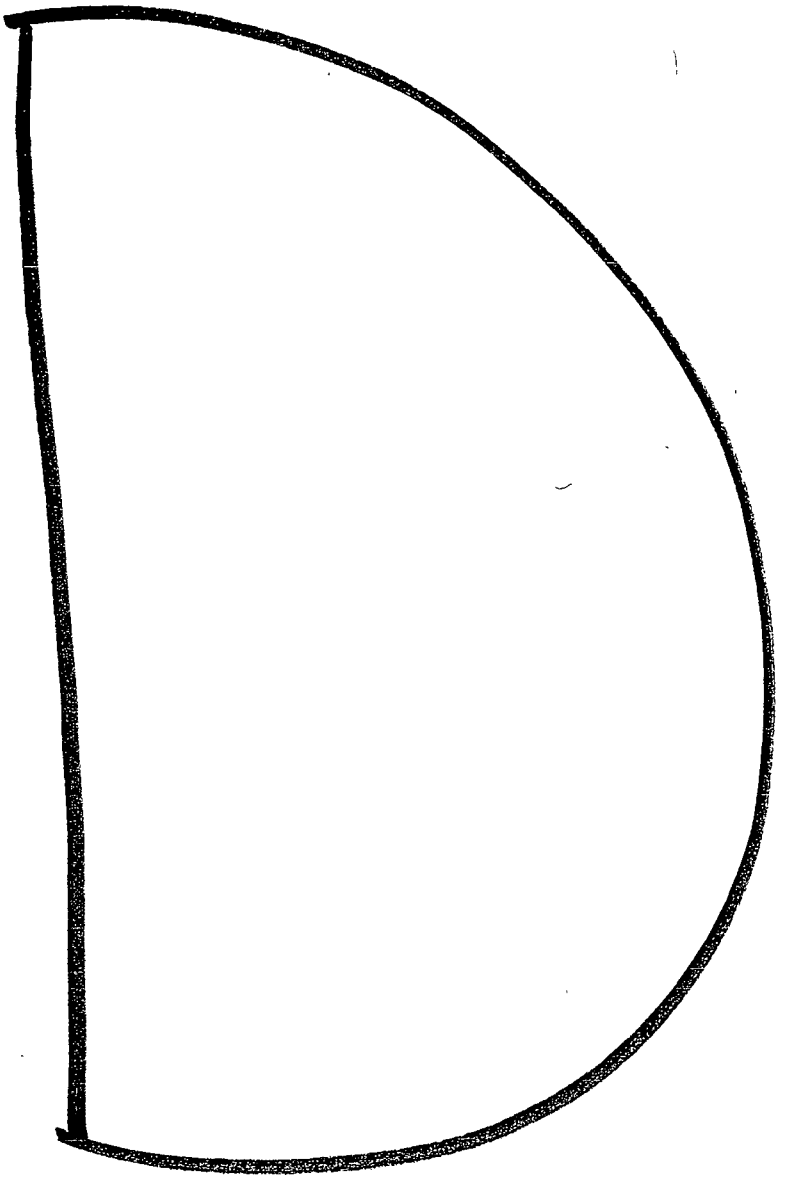
Free phase product removal is conducted utilizing dedicated polyethylene bailers, passive sorbent bailers, or an active product recovery system. Free-phase product recovery utilizing a polyethylene disposable bailer is performed by lowering the disposable bailer to the product/water interface and bailing the product from the well until only a film or consistent thickness of product remains in the well.

A passive sorbent bailer system is utilized when product thicknesses are insufficient for removal with a disposable bailer. A passive sorbent bailer is suspended at the product/water interface with a vent tube or suspension cord. The sorbent bailer allows for passive collection of free-phase product utilizing a hydrophobic filter buoy. Product accumulates in a canister at the bottom of the bailer and is evacuated periodically utilizing a drain valve located at the base of the canister.

Active free-phase product recovery is utilized when removal of larger volumes of free-phase product is required. Active free-phase product recovery is accomplished with compressed air, vacuum recovery, or electrical submersible product recovery pumps and may involve water table depression, dual phase recovery, or product skimmer systems. Product recovery records will be maintained and reported to the MPCA on a periodic basis.

Laboratory Analysis

Laboratory analysis of the soil and ground water samples will be conducted by a certified laboratory using standard EPA methods. Benzene, toluene, ethylbenzene, xylenes (BTEX), volatile organic compounds (VOC's), total petroleum hydrocarbons (TPH) as gasoline utilizing GRO methodology and TPH as fuel oil using DRO methodology will be conducted in accordance with Wisconsin methodology or equivalent methods approved by the MPCA.



APPENDIX D

GEOLOGIC LOGS OF SOIL BORINGS AND MONITOR WELL CONSTRUCTION DIAGRAMS

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 6-13-02 GRADE ELEVATION: 99.57	BORING: B-1 (MW-5) SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	"N"	PID PPM	NOTES ODOR/RECOVERY
			GRAVEL			
			NO SAMPLE--PREVIOUSLY EXCAVATED UST BASIN ON 4-17-02			
	2.0					
	4.0					
	6.0					
	8.0					
	10.0	SP	SAND, fine to medium, black, saturated. Free product. Outwash.		653.0	Strong odor/ 2.0 ft.
	12.0	SP			308.0	Strong odor/ 3.0 ft.
	14.0		NO SAMPLE			
	16.0	SP	SAND, fine to coarse; some fine gravel; brown; saturated. Outwash.		3.9	Odor/ 2.0 ft. (from water above)
	18.0		NO SAMPLE			
	20.0	SP	SAND, fine to medium; trace fine gravel; brown; saturated. Outwash.		0.2	No odor/ 2.0 ft.

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 6-13-02 GRADE ELEVATION: 99.57	BORING: B-1 (MW-5) SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	"N"	PID PPM	NOTES ODOR/RECOVERY
			GRAVEL			
	22.0		NO SAMPLE			
	24.0					
		SP	SAND, fine to coarse, brown, saturated. Outwash.		ND	No odor/ 0.5 ft.
	26.0					
	28.0	CL	CLAY; trace medium to coarse sand; black; saturated. Till.		ND	No odor/ 2.0 ft.
	30.0		REFUSAL AT 30 FEET BG			
			END OF BORING AT 30 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE			
	32.0					
	34.0					
	36.0					
	38.0					
	40.0					

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 6-13-02 GRADE ELEVATION:	BORING: B-2 SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	"N"	PID PPM	NOTES ODOR/RECOVERY
			CONCRETE			
		MH	SILT; trace clay; black; damp. Fill.		ND	No odor/ 1.0 ft.
	2.0	ML	SILT and fine to coarse sand, brown/black, damp. Alluvium.		11.5*	No odor/ 2.0 ft.
	4.0	SM	SAND, fine to coarse; trace silt; brown; moist. Outwash.		63.1*	No odor/ 2.0 ft.
	6.0	SP	SAND, fine to coarse; some fine gravel; brown; moist. Outwash.		14.6*	No odor/ 2.0 ft.
	8.0	SC	SAND, fine to coarse; trace clay; brown/ black; moist. Outwash.		25.0	Odor/ 2.0 ft.
	10.0	SP	SAND, fine to coarse, gray, saturated. Outwash.		198.0	Strong odor/ 2.0 ft.
	12.0	SP	SAND, fine to coarse, brown/gray, saturated. Outwash.		40.1	Odor/ 2.0 ft.
	14.0					
		SP	SAND, fine to coarse; some fine gravel; brown; saturated. Outwash.		2.9	No odor/ 2.0 ft.
	16.0					
	18.0		NO SAMPLE			
	20.0	SP	SAND, fine to coarse, brown, saturated. Outwash.		3.2	No odor/ 2.0 ft.

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 6-13-02 GRADE ELEVATION:	BORING: B-2 SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	"N"	PID PPM	NOTES ODOR/RECOVERY
			CONCRETE			
	22.0	SW	SAND, fine, brown, saturated. Outwash.		ND	No odor/ 2.0 ft.
	24.0					
	26.0		END OF BORING AT 25 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE			
	28.0		* PID malfunction suspected			
	30.0					
	32.0					
	34.0					
	36.0					
	38.0					
	40.0					

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 6-13-02 GRADE ELEVATION:	BORING: B-3 SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION GRASS	N	PID PPM	NOTES ODOR/RECOVERY
		ML	SILT; some fine to coarse sand; trace fine gravel; black; dry to damp. Topsoil.		ND	No odor/ 3.0 ft.
	2.0					
		ML	SILT; some fine to coarse sand; trace fine gravel; black; dry to damp. Alluvium.		ND	No odor/ 3.0 ft.
	4.0					
	6.0	SC	SAND, fine to coarse; trace silt; trace clay; brown; damp to moist. Outwash.		ND	No odor/ 3.0 ft.
	8.0					
		SC	SAND, fine to coarse; trace fine gravel; trace clay; black; saturated. Possible free product. Outwash.		881.0	Strong odor/ 3.0 ft.
	10.0					
	12.0	SP	SAND, fine to coarse, black/gray, saturated. Possible free product. Outwash.		842.0	Strong odor/ 3.0 ft.
	14.0					
		SP	SAND, fine to coarse, gray, saturated. Outwash.		1,130.0	Strong odor/ 3.0 ft.
	16.0					
	18.0		NO SAMPLE			
	20.0					

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 6-13-02 GRADE ELEVATION:	BORING: B-3 SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	N	PID PPM	NOTES ODOR/RECOVERY
			GRASS			
		SP	SAND, fine to coarse; trace fine gravel; brown; saturated. Outwash.		1.1	No odor/ 2.0 ft.
	22.0					
	24.0		NO SAMPLE			
	26.0	SP	SAND, fine to coarse; some fine gravel; brown; saturated. Outwash.		ND	No odor/ 2.0 ft.
	28.0		END OF BORING AT 28 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE			
	30.0					
	32.0					
	34.0					
	36.0					
	38.0					
	40.0					

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 6-13-02 GRADE ELEVATION:	BORING: B-4 SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	N	PID PPM	NOTES ODOR/RECOVERY
			CONCRETE			
			NO SAMPLE—PREVIOUSLY EXCAVATED PUMP ISLAND AREA ON 4-17-02			
	2.0	ML	SILT; some fine to coarse sand; brown; damp. Alluvium.		4.1	No odor/ 2.0 ft.
	4.0	SM	SAND, fine to coarse; trace silt; brown; damp to moist. Outwash.		32.0	Odor/ 2.0 ft.
	6.0	SP	SAND, fine to coarse; trace fine gravel; brown; moist. Outwash.		808.2	Odor/ 2.0 ft.
	8.0	SW	SAND, fine, brown, saturated. Possible free product. Outwash.		1,363.0	Strong odor/ 1.0 ft.
	10.0		NO SAMPLE			
	12.0	SP	SAND, fine to coarse, brown, saturated. Outwash.		212.2	Odor/ 0.3 ft.
	14.0					
	16.0	SP			21.9	Slight odor/ 2.0 ft. (from water above)
	18.0		NO SAMPLE			
	20.0					

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 6-13-02 GRADE ELEVATION:	BORING: B-4 SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION CONCRETE	N	PID PPM	NOTES ODOR/RECOVERY
		SP	SAND, fine to coarse; trace fine gravel; brown; saturated. Outwash.		2.4	No odor/ 2.0 ft.
	22.0					
	24.0	SP			ND	No odor/ 2.0 ft.
	26.0		END OF BORING AT 26 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE			
	28.0					
	30.0					
	32.0					
	34.0					
	36.0					
	38.0					
	40.0					

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA			DATE: 8-6-02		BORING: B-5
			GRADE ELEVATION: 99.64		SCALE: 1" = 3'
SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	N	PID PPM	NOTES ODOR/RECOVERY
			NO SAMPLE			
	2.0	SP	SAND, fine to coarse; trace fine gravel; brown; dry. Outwash.		402.0*	No odor/ 0.5 ft.
	4.0	SM	SAND, fine to coarse; some fine to medium gravel; trace silt; brown; damp. Outwash.		219.0*	No odor/ 0.5 ft.
	6.0	SM			250.0*	No odor/ 0.5 ft.
	8.0	SP	SAND, fine to coarse; trace fine to coarse gravel; brown; saturated. Outwash.		92.0*	No odor/ 0.5 ft.
	10.0	SP	SAND, fine to coarse; trace fine gravel; brown; saturated. Outwash.		ND	No odor/ 0.5 ft.
	12.0	SP	SAND, fine to coarse, brown, saturated. Outwash.		ND	No odor/ 0.3 ft.
	14.0	SP	SAND, fine to coarse; trace fine gravel; brown; saturated. Outwash.		94.0	Odor/ 1.5 ft.
	16.0	SP			526.0	Strong odor/ 1.5 ft.
	18.0		REFUSAL AT 19 FEET BG			
	20.0		END OF BORING AT 19 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE * PID malfunction suspected			

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 8-6-02	BORING: B-6 (MW-1)
	GRADE ELEVATION: 99.88	SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	N	PID PPM	NOTES ODOR/RECOVERY
			NO SAMPLE			
	2.0	SP	SAND, fine to coarse; some fine gravel; brown; moist. Fill.		61.0*	No odor/ 1.5 ft.
	4.0	SP	SAND, fine to coarse; some fine gravel; brown; damp to moist. Fill.		60.0*	No odor/ 1.0 ft.
	6.0	SP	SAND, fine to coarse; trace fine to coarse gravel; brown; damp to moist. Fill.		37.0*	No odor/ 1.0 ft.
	8.0	SC	SAND, fine to coarse; some fine gravel; trace clay; brown; saturated. Fill.		32.0*	No odor/ 1.5 ft.
	10.0	SP	SAND, fine to coarse and fine gravel, brown, saturated. Outwash.		2.0	No odor/ 1.5 ft.
	12.0	SC	SAND, fine to coarse and fine gravel; trace clay; brown; saturated. Outwash.		1.6	No odor/ 1.5 ft.
	14.0	SP	SAND, fine to coarse; trace fine gravel; brown; saturated. Outwash.		2.3	Odor/ 0.5 ft.
	16.0	SP	SAND, fine to coarse; trace fine to coarse gravel; brown; saturated. Outwash.		ND	No odor/ 0.5 ft.
	18.0		REFUSAL AT 19 FEET BG			
	20.0		END OF BORING AT 19 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE * PID malfunction suspected			

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 8-6-02 GRADE ELEVATION: 99.69	BORING: B-7 (MW-3) SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	N	PID PPM	NOTES ODOR/RECOVERY
			NO SAMPLE			
	2.0	SM	SAND, fine to coarse; trace fine to medium gravel; trace silt; black; damp. Alluvium.		ND	No odor/ 0.3 ft.
	4.0	SP	SAND, fine to coarse; some fine gravel; brown; dry. Outwash.		3.0	No odor/ 1.0 ft.
	6.0	SP	SAND, fine to coarse; trace fine to medium gravel; brown; dry. Outwash..		3.4	No odor/ 1.5 ft.
	8.0	SP	SAND, fine to coarse; trace fine gravel; brown; saturated. Outwash.		3.7	No odor/ 1.5 ft.
	10.0	SP	SAND, fine to coarse; trace fine gravel; brown/rust; saturated. Outwash.		15.0	Slight odor/ 1.5 ft.
	12.0	SP	SAND, fine to coarse; trace fine to medium gravel; brown/gray; saturated. Outwash.		50.0	Odor/ 1.0 ft.
	14.0	SP	SAND, fine to coarse, brown, saturated. Outwash.		10.7*	No odor/ 1.0 ft.
	16.0	SP			ND	No odor/ 1.0 ft.
	18.0		REFUSAL AT 19 FEET BG			
	20.0		END OF BORING AT 19 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE * PID malfunction suspected			

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA				DATE: 8-6-02 GRADE ELEVATION: 99.99		BORING: B-8 (MW-4) SCALE: 1" = 3'
SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	N	PID PPM	NOTES ODOR/RECOVERY
			NO SAMPLE			
	2.0	SM	SAND, fine to coarse; some silt; trace fine to medium gravel; brown; damp. Topsoil.		4.0	No odor/ 1.5 ft.
	4.0	SP	SAND, fine to coarse; trace fine gravel; brown; dry. Outwash.		13.0*	No odor/ 1.0 ft.
	6.0	SP			13.0*	No odor/ 1.0 ft.
	8.0	SP	SAND, fine to coarse; trace fine gravel; brown; saturated. Outwash.		11.0*	No odor/ 1.0 ft.
	10.0		NO SAMPLE-ROCK			
	12.0	SP	SAND, fine to coarse; trace fine to medium gravel; gray; saturated. Outwash.		8.6	Odor/ 1.0 ft.
	14.0	SP	SAND, fine to coarse, gray, saturated. Outwash.		2.0	Slight odor/ 1.0 ft.
	16.0	SP	SAND, fine to coarse; brown/gray; saturated. Outwash.		ND	Slight odor/ 1.0 ft.
	18.0		REFUSAL AT 19 FEET BG			
	20.0		END OF BORING AT 19 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE * PID malfunction suspected			

BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 8-7-02 GRADE ELEVATION: 99.67	BORING: B-9 (MW-2) SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	N	PID PPM	NOTES ODOR/RECOVERY
			NO SAMPLE			
	2.0	SM	SAND, fine to coarse; some silt; some organics; brown; damp. Topsoil.		4.3	No odor/ 1.0 ft.
	4.0	SP	SAND, fine to coarse; trace fine gravel; trace organics; brown; damp to moist. Alluvium.		11.5*	No odor/ 1.0 ft.
	6.0	SP	SAND, fine to coarse; some fine to medium gravel; brown; damp. Outwash.		8.6	No odor/ 0.5 ft.
	8.0	SP	SAND, fine to coarse; brown; saturated. Outwash.		4.0	No odor/ 1.5 ft.
	10.0	SP	SAND, fine to coarse; trace fine gravel; brown; saturated. Outwash.		2.2	No odor/ 1.5 ft.
	12.0	SP	SAND, fine to coarse, brown, saturated. Outwash.		2.7	No odor/ 1.5 ft.
	14.0 16.0	SP	SAND, fine to coarse; trace fine gravel; brown; saturated; Outwash.		2.8	No odor/ 1.0 ft.
	18.0	SP	SAND, fine to coarse, brown, saturated. Outwash.		1.4	No odor/ 1.5 ft.
	20.0		END OF BORING AT 19 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE * PID malfunction suspected			

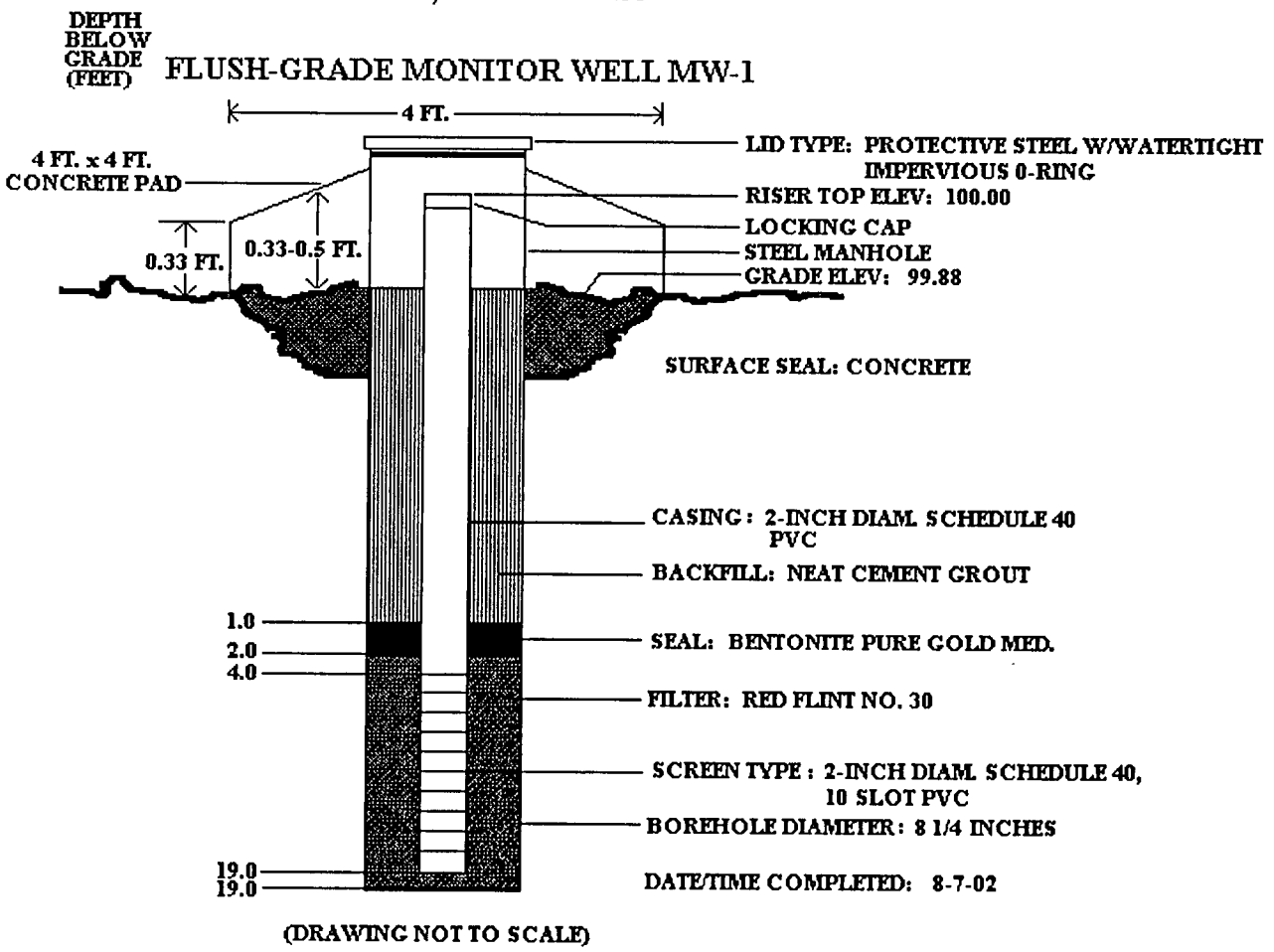
BORING LOG

PROJECT: FORMER K-C KWIK STOP BROOTEN, MINNESOTA	DATE: 2-4-03 GRADE ELEVATION: 99.74	BORING: B-10 (MW-6) SCALE: 1" = 3'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION	N	PID PPM	NOTES ODOR/RECOVERY
			NO SAMPLE			
	2.0					
		SP	SAND, fine to coarse, brown, dry. Outwash.		ND	No odor/ 2.0 ft.
	4.0					
		SP	SAND, fine to coarse; trace fine to medium gravel; brown; damp. Outwash.		ND	No odor/ 2.0 ft.
	6.0					
		SP			0.5	No odor/ 2.0 ft.
	8.0					
	10.0	SP	SAND, fine to coarse, brown, saturated. Outwash.		2.8	No odor/ 2.0 ft.
	12.0	SP	SAND, fine to medium, brown, saturated. Outwash.		0.7	No odor/ 2.0 ft.
	14.0					
		SP	SAND, fine to coarse; trace fine gravel; brown; saturated. Outwash.		0.4	No odor/ 2.0 ft.
	16.0					
		SP			ND	No odor/ 2.0 ft.
	18.0					
	20.0		END OF BORING AT 19 FT. BG FT. = FEET ND = NONDETECTABLE BG = BELOW GRADE			

MONITOR WELL CONSTRUCTION DIAGRAM - MINNESOTA

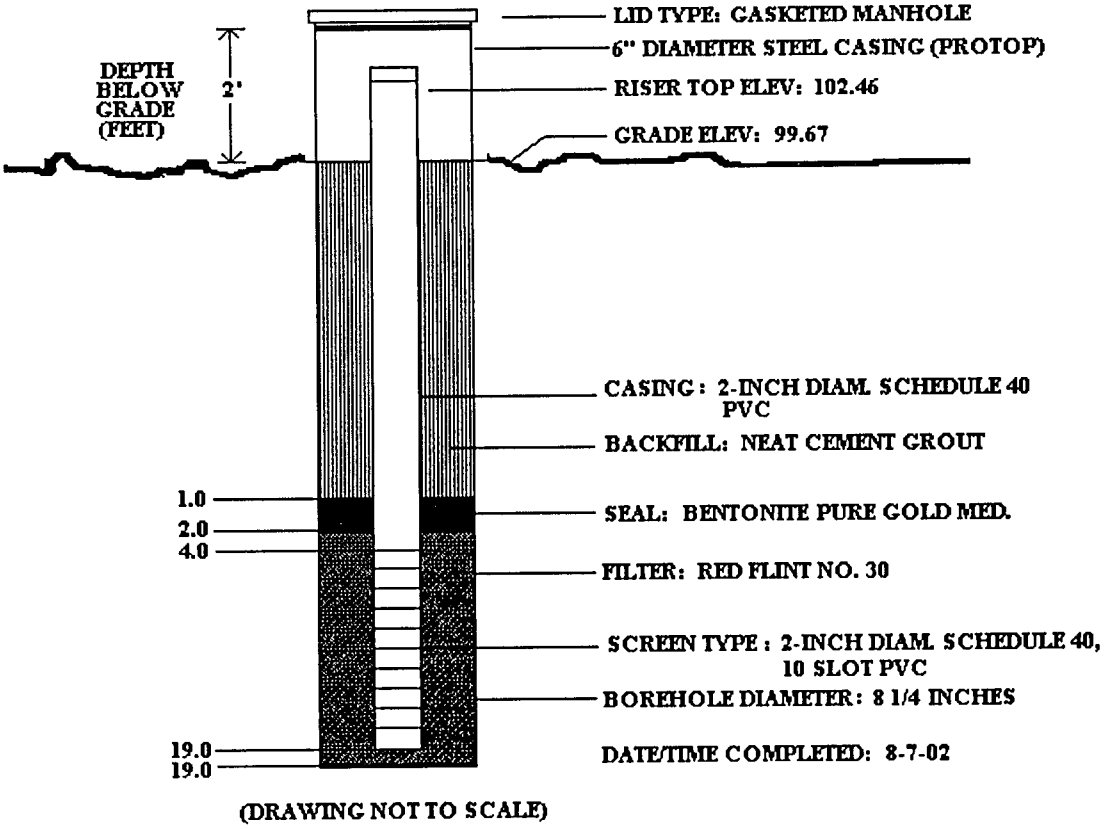
FORMER K-C KWIK STOP
BROOTEN, MINNESOTA



MONITOR WELL CONSTRUCTION DIAGRAM - MINNESOTA

FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

ABOVE-GRADE MONITOR WELL MW-2

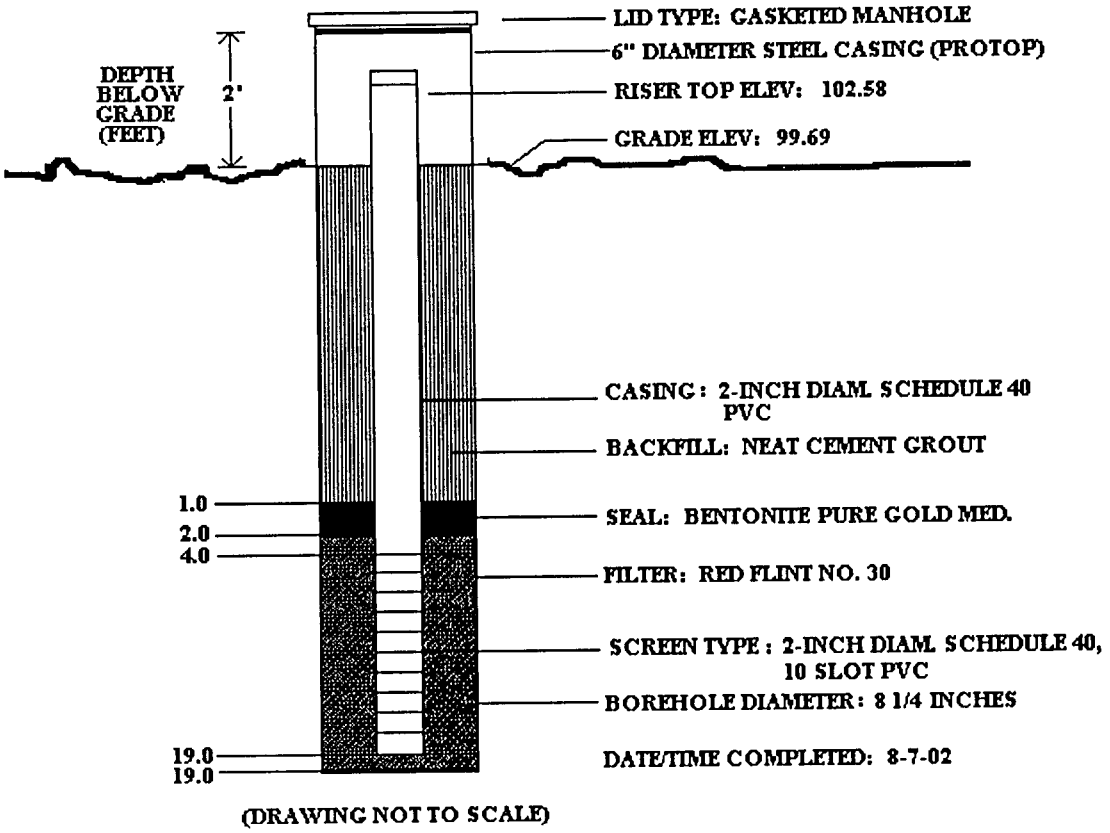


(DRAWING NOT TO SCALE)

MONITOR WELL CONSTRUCTION DIAGRAM - MINNESOTA

FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

ABOVE-GRADE MONITOR WELL MW-3

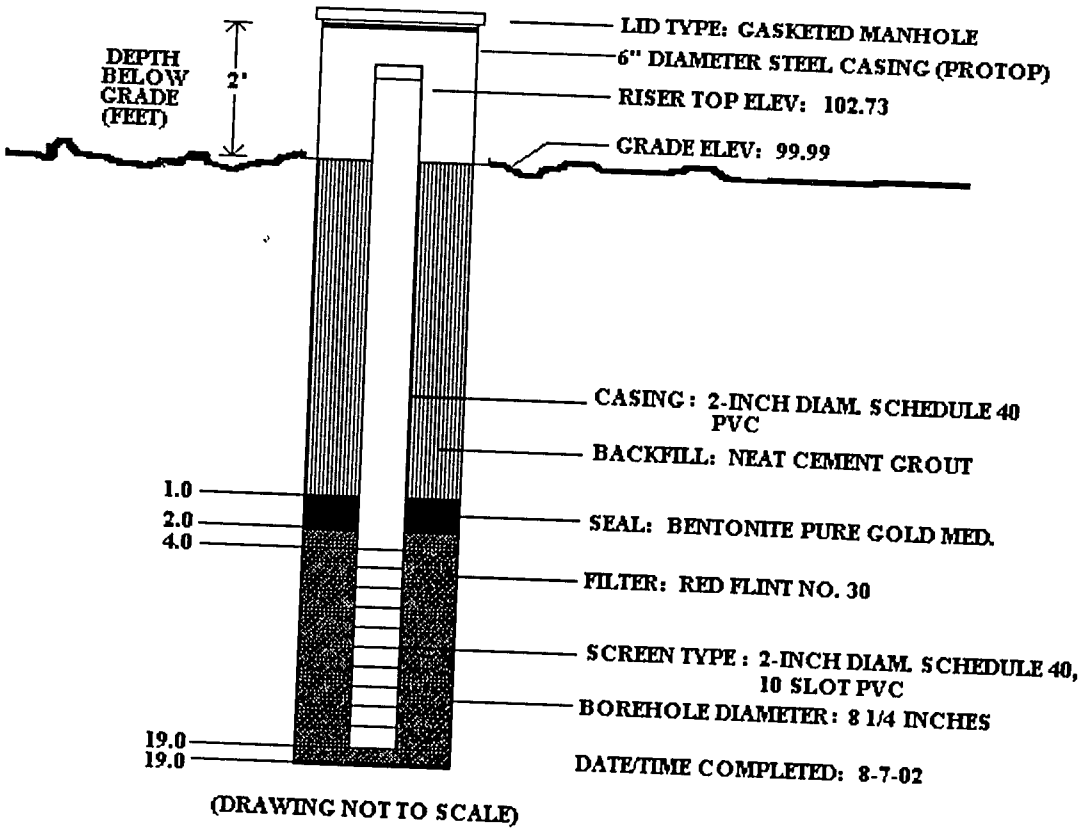


(DRAWING NOT TO SCALE)

MONITOR WELL CONSTRUCTION DIAGRAM - MINNESOTA

FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

ABOVE-GRADE MONITOR WELL MW-4



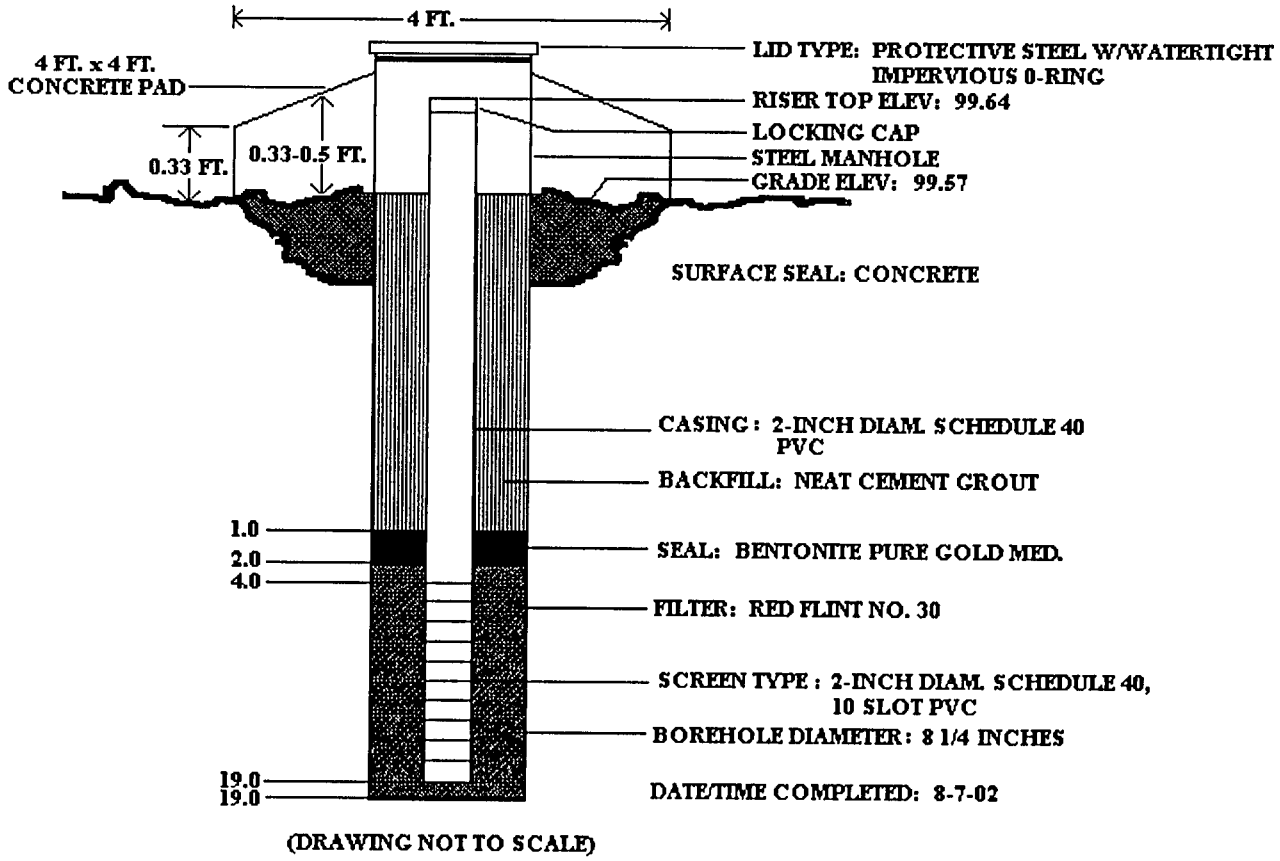
(DRAWING NOT TO SCALE)

MONITOR WELL CONSTRUCTION DIAGRAM – MINNESOTA

FORMER K-C KWIK STOP
BROOTEN, MINNESOTA

DEPTH BELOW GRADE (FEET)

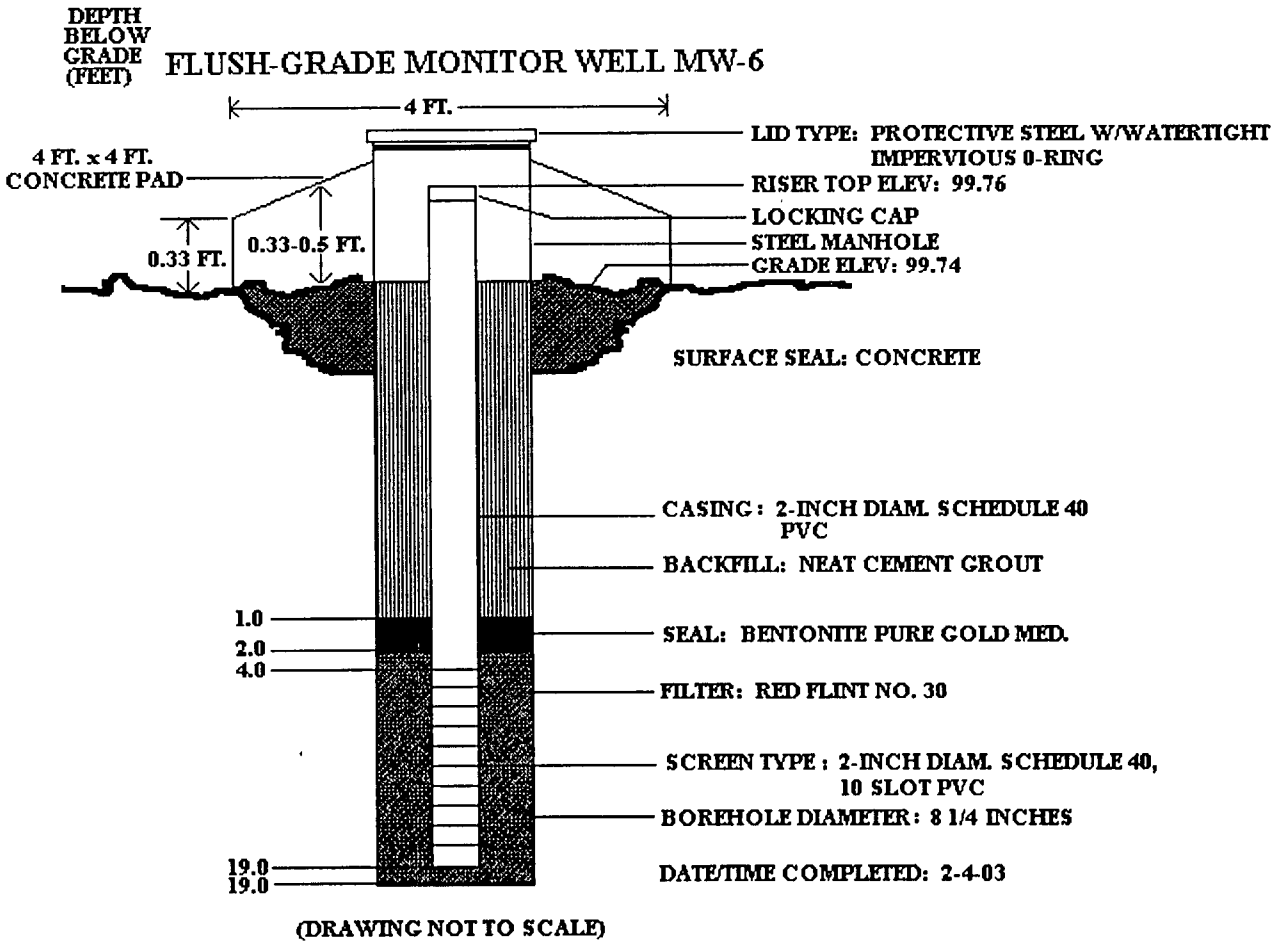
FLUSH-GRADE MONITOR WELL MW-5



(DRAWING NOT TO SCALE)

MONITOR WELL CONSTRUCTION DIAGRAM - MINNESOTA

FORMER K-C KWIK STOP
BROOTEN, MINNESOTA



APPENDIX E

COPIES OF WATER SUPPLY WELL LOGS

Unique No. 00458780

County Name Stearns

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes Chapter 1031

Update Date 1993/07/12

Entry Date 1992/11/18

Township Name	Township	Range	Dir	Section	Subsection
	124	35	W	31	CDBDCD

Well Depth 45 ft. | Depth Completed 45 ft. | Date Well Completed 1990/06/04

Well Name BOHMER, JOHN

Drilling Method Non-specified Rotary

Contact's Name BOHMER, JOHN

BROOTEN MN

Drilling Fluid: Other

Well Hydrofractured? ☐ Yes ☐ No From ft. to ft.

Use Other (specify in remarks)

Casing — Drive Shoe? ☐ Yes ☑ N

Hole Diameter: 0 in. to 45 ft

Casing Diameter — Weight(lbs/ft): 4 in. to 40 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
TOP SOIL	BLACK	SOFT	0	1
SAND & GRAVEL	GRAY	SOFT	1	45

Screen Y — Open Hole From ft. to ft.

Make CERTA-LINK Type P

Diameter	Slot	Length	Set	Fitting
4	85	5	40 ft. to 45 ft	

Static Water Level 12 ft. from Land surface Date 1990/06/04

PUMPING LEVEL (below land surface): 15 ft. after hrs. pumping 10 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☐ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information — Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
O	0	8	0
G	8	40	0
O	40	45	0

Nearest Known Source of Contamination: ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr name

Model HP 0 Volts

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 73413

License Business Name

REMARKS, ELEVATION, SOURCE OF DATA, etc.

1ST & CENTRAL AVE., BROOTEN, MN 56316

LOCATED 600' SW OF HWY. 55 & CO. RD. 18

USGS Quad Padua Elevation 1310

Aquifer: QWTA Alt Id:

Unique No. 00102020

County Name Stearns

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 1993/07/16

Entry Date 1988/04/17

Township Name	Township	Range	Dir	Section	Subsection
	123	35	W	6	ACBBBB

Well Depth 180 ft. | Depth Completed 166 ft. | Date Well Completed 1975/08/07

Well Name BROOTEN 2

Drilling Method Non-specified Rotary

Contact's Name BROOTEN 2

BROOTEN MN 56316

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Community Supply (municipal)

Casing | Drive Shoe? ☐ Yes ☐ N | Hole Diameter

Casing Diameter | Weight(lbs/ft)

10 in. to 141 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DIRT	BLACK		0	1
SAND + ROCKS + CLAY LEN			1	39
CLAY + SAND SEAMS	BLUE		39	43
SANDY CLAY	BLUE		43	60
SAND			60	64
ROCK			64	66
SANDY CLAY	BLUE		66	70
ROCK			70	71
SANDY CLAY	BLUE		71	80
ROCKS			80	82
SANDY CLAY + SAND LENS	BLUE		82	110
ROCKS			110	112
SANDY CLAY	BLUE		112	130
SAND WITH BLUE CLAY	BLUE		130	140
SAND			140	141
ROCK			141	142
SAND			142	160
SAND			160	180

Screen Y | Open Hole From ft. to ft.

Make JOHNSON 304 Type L

Diameter	Slot	Length	Set	Fitting
10	40	25	141 ft. to 166 ft	

Static Water Level 21 ft. from Land surface Date 1975/08/07

PUMPING LEVEL (below land surface)

54.25 ft. after hrs. pumping 500 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☐ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G	0	0	0

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y

Mfr name VERTI-LINE

Model 8RL HP 20 Volts 230

Drop Pipe Length 102 ft. Capacity 300 g.p.m

Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 12013

License Business Name

REMARKS, ELEVATION, SOURCE OF DATA, etc.

NURE NO.602279.

USGS Quad Belgrade Elevation 1308

Aquifer: QBAA Alt Id: 80-3092

Unique No. 00215137

County Name Stearns

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes Chapter 1031

Update Date 2002/02/18

Entry Date 1988/04/17

Township Name	Township	Range	Dir	Section	Subsection
	124	35	W	31	CDABCC

Well Depth 220 ft. | Depth Completed 220 ft. | Date Well Completed /19/24

Well Name BROOTEN 1

Drilling Method

Contact's Name BROOTEN 1

BROOTEN MN 56316

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Community Supply (municipal)

Casing Drive Shoe? ☐ Yes ☐ N

Hole Diameter

Casing Diameter 8 in. to 210 ft

Weight(lbs/ft)

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT			0	220

Screen

Make

Open Hole From ft. to ft.

Type

Static Water Level 22 ft. from Land surface Date /19/24

PUMPING LEVEL (below land surface)

0 ft. after hrs. pumping 350 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☐ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y

Mfr name

Model HP 0 Volts

Drop Pipe Length ft. Capacity g.p.m

Type S

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

USGS Quad Padua Elevation 1312

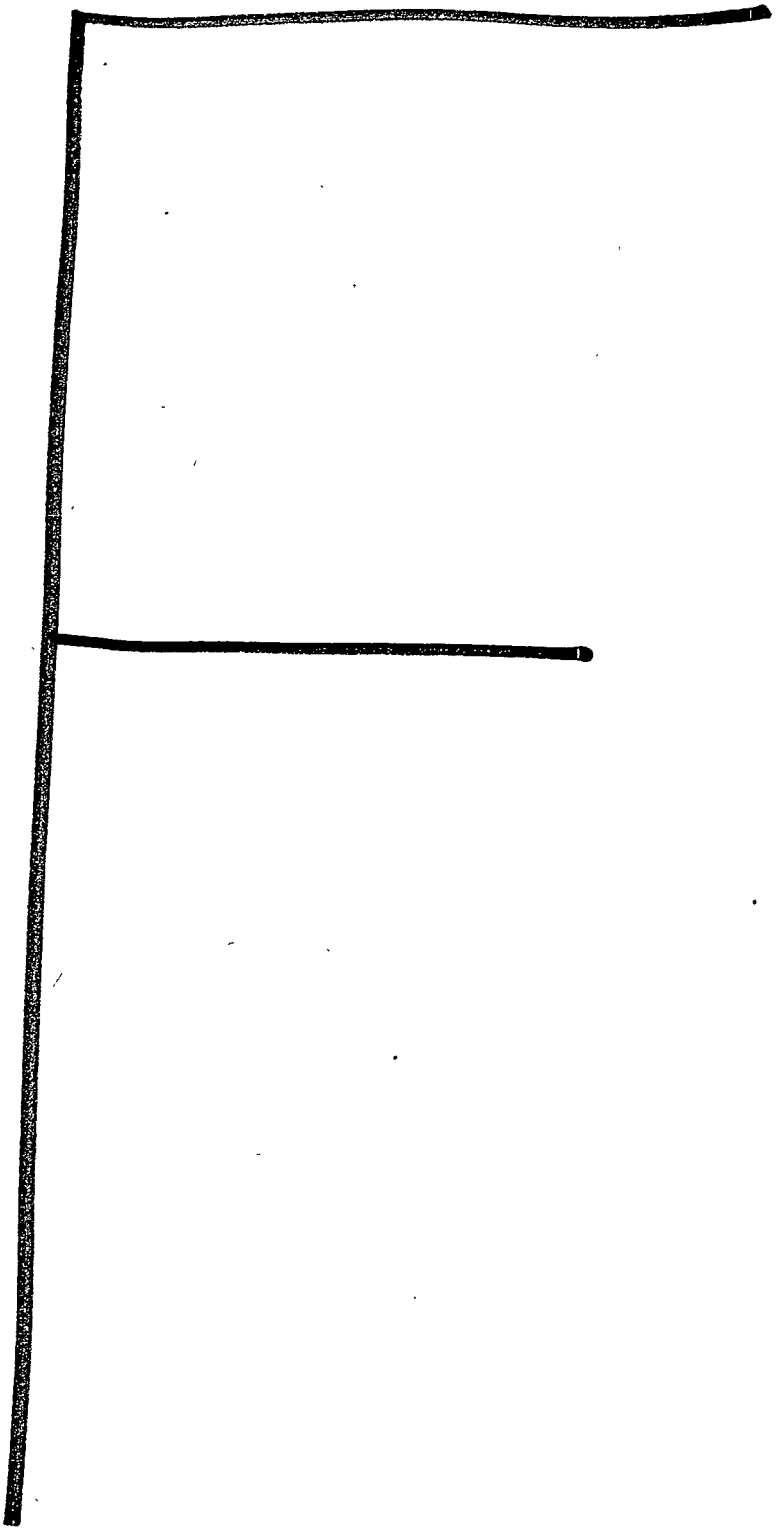
Aquifer: QBAA Alt Id: 80-3092

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. USGS

License Business Name

Name of Driller

Report Copy



APPENDIX F

GRAIN SIZE ANALYSIS AND HYDRAULIC CONDUCTIVITY MEASUREMENTS

KC Kwik Stop
B-1

SIEVE #	mm	% Retained	% Passed
		59%	
6	3.3		40%
		21%	
16	1.2		19%
		12%	
25	0.675		7%
		7	
40	0.375		0%
		0%	
		99%	

Hydraulic conductivity calculations

K=A(d10)^2

		cm/sec			
A=	1				
d10 =	0.700				
K=	0.490	cm/sec	equals	1388.98	feet/day
b=	19	feet			

T=K*b ft^2/sec

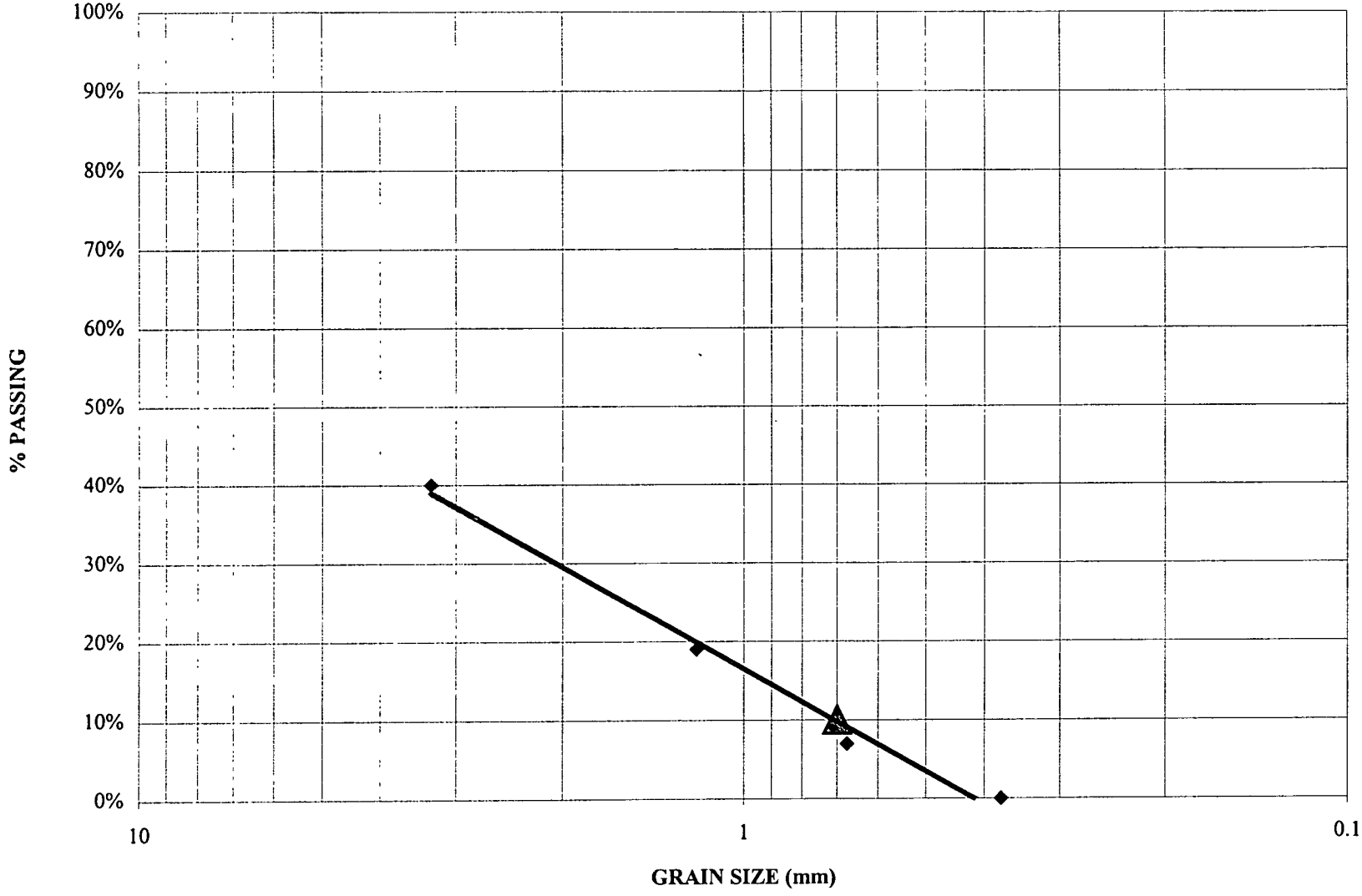
T=Kcm/sec * in/2.54 cm * ft/12 in * b ft = ft^2/sec

T= 0.3054 ft^2/sec

T= ft^2/sec * 60sec/min * 60 min/hr * 24hr/day = ft^2/day

T=	26387	ft^2/day	>50	AQUIFER	BLUE
			<50	NO AQUIFER	RED

KC KWIK STOP, BROOTEN, MN
B-1 (16-18 FT)



KC Kwik Stop
B-2

SIEVE #	mm	% Retained	% Passed
		14%	
6	3.3		87%
		18%	
16	1.2		69%
		28%	
25	0.675		41%
		29%	
40	0.375		12%
		12%	
		101%	

Hydraulic conductivity calculations

K=A(d10)^2

cm/sec

A= 1
d10 = 0.290

K= 0.084 cm/sec equals 238.11 feet/day
b= 19 feet

T=K*b ft^2/sec

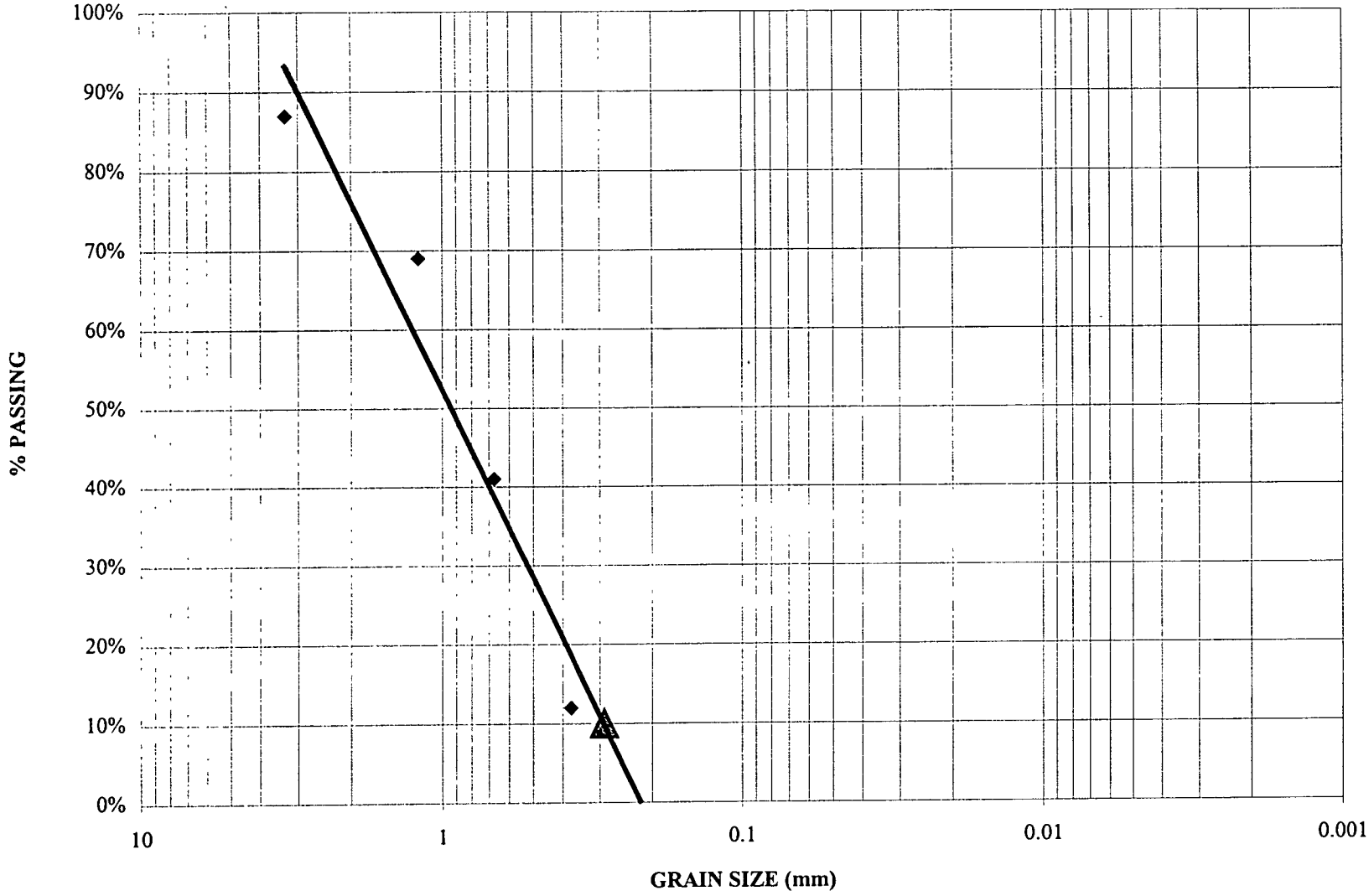
T=Kcm/sec * in/2.54 cm * ft/12 in * b ft = ft^2/sec

T= 0.0524 ft^2/sec

T= ft^2/sec * 60sec/min * 60 min/hr * 24hr/day = ft^2/day

T=	4527 ft^2/day	>50	AQUIFER	BLUE
		<50	NO AQUIFER	RED

KC KWIK STOP, BROOTEN, MN
B-2 (15-17 FT)



KC Kwik Stop
B-3

SIEVE #	mm	% Retained	% Passed
		25%	
6	3.3		74%
		19%	
16	1.2		55%
		20%	
25	0.675		35%
		25%	
40	0.375		10%
		10%	
		99%	

Hydraulic conductivity calculations

K=A(d10)^2

		cm/sec			
A=	1				
d10 =	0.320				
K=	0.102	cm/sec	equals	289.13	feet/day
b=	19	feet			

T=K*b ft^2/sec

T=Kcm/sec * in/2.54 cm * ft/12 in * b ft = ft^2/sec

T= 0.0636 ft^2/sec

T= ft^2/sec * 60sec/min * 60 min/hr * 24hr/day = ft^2/day

T=	5495	ft^2/day	>50	AQUIFER	BLUE
			<50	NO AQUIFER	RED

KC KWIK STOP, BROOTEN, MN
B-3 (21-23 FT)