WELLHEAD AREA SURVEY
SIDELING HILL AMOCO
ACHD SITE NO. 80
Belle Grove, Allegany County, Maryland

ALWI Project No. AL7N001

1.0 INTRODUCTION

Advanced Land and Water, Inc. (ALWI) was retained by the Allegany County Health Department (ACHD), to prepare a Wellhead Area Survey for Sideling Hill Amoco, located on the south side of Old National Pike (MD Route 144), approximately 0.5 mile west of the Washington County line in Allegany County, Maryland. The Sideling Hill Amoco is a small commercial gasoline and convenience store with lunch counter service and public restrooms. This site, designated No. 80 by ACHD, is served by one production well completed in the local bedrock aquifer.

The draft MDE "Transient Water Systems Operations Guidance" manual (herein termed the "Guidance Manual") defines a Non-Transient Non-community (NTNC) Water System as one that "...serves at least 25 regular consumers over 6 months per year." The small number of employees (typically 2 or 3 per shift) and the nature of the clientele (highway travelers passing through) suggests that 25 regular customers are not served, though overall service likely exceeds this from a purely volumetric perspective. Therefore, this site is a transient non-community system (TNC).

1.1 PURPOSE

The Safe Drinking Water Act (SDWA) of 1974 required the U.S. Environmental Protection Agency (EPA) to develop enforceable drinking water quality standards to protect the public health. In 1986, amendments made to the SDWA strengthened provisions for the protection of underground sources of drinking water. These amendments included provisions for establishing Wellhead Protection Programs by individual states under "umbrella" EPA oversight. The EPA approved a statewide Wellhead Protection Program developed by MDE in June 1991.

The MDE program originally applied to community water supplies, only. A newly proposed broadening of the federal Clean Water Act will have the result of expanding the MDE Wellhead Protection Program to encompass non-community supplies both transient and non-transient in nature. ACHD, in cooperation with MDE, established this program to bring existing non-community supplies into compliance with the coming regulations.

1.2 SCOPE

ALWI prepared this Wellhead Area Survey following ACHD requirements, which followed MDE guidelines for transient system operation and wellhead protection.

1. **Site Reconnaissance, Photographic Documentation and Interviews** – ALWI observed the on-site wellhead, storage, treatment, and distribution infrastructure to the degree exposed without excavation or exposure to personal hazards. ALWI used an ACHD-owned digital camera to photograph conditions surrounding the wellhead at the time of the field reconnaissance. Said photographs are stored on ACHD's computer system. ALWI interviewed the owner/operator and/or employee(s) to document information on the use patterns, history, and problems associated with the supply.

2. **Baseline Water Quality Assessment** - ALWI purged the water system and collected samples for analysis in the ACHD laboratory that is affiliated with the Maryland Department of Health and Mental Hygiene (DHMH). ALWI performed this fieldwork in accordance with MDE potable water sampling criteria including in-field measurements of turbidity, chlorine, and pH. ACHD selected the analyte list based on countywide experience with potability concerns and the capabilities of the aforementioned laboratory. The analytes included total and fecal coliform bacteria, nitrates, nitrites, iron, sulfur and manganese (Appendix B).

3. **Contamination Hazard Assessment** – ALWI identified existing and potential contaminant hazards within the delineated area based on visual observations and the techniques enumerated above. ALWI ranked these hazards in term of relative risk and provided concrete suggestions for their appropriate address. More generally, herein ALWI provides specific recommendations for source reduction measures, contingency plans, and other methods that may help better protect against occurrences of groundwater contamination.

2.0 HYDROGEOLOGIC FRAMEWORK

ALWI used published information from the United States Geological Survey and the Maryland Geological Survey to identify and describe the characteristics of the local hydrogeologic setting.

2.1 Bedrock Geology

Sideling Hill Amoco is situated within the Appalachian Valley and Ridge physiographic province and is underlain by sedimentary rocks of Silurian and Devonian age. The Foreknobs Formation is part of the Catskill clastic wedge and consists of red-colored sandstones and lesser amounts of shale. These rocks have been intensely folded and faulted, resulting in alternating synclines (concave-upward folds) and anticlines (convex-upward folds).

In three dimensions, the rock formations of such folds dip at right angles to the direction of plunge of the entire fold system. In general, dip directions may help govern groundwater (and contaminant) movement directions in the bedrock but plunge directions have no relation. At this location, the bedding planes on the western limb of the Sideling Hill Syncline dips moderately steeply to the east-southeast (Glaser, 1994). Deep groundwater flow directions likely follow.

Reported well yields within the Jennings Group, of which the Foreknobs Formation is a part, range from less than 1 to over 30 gallons per minute (gpm), with most yielding between 5 and 10 gpm. Jennings Group wells completed within the sandstone formations (such as that comprising the Foreknobs Formation) generally have a higher yield because the greater competence of the rock allows the development of longer and wider fractures both along and across bedding planes.

2.2 SAPROLITE AND SOIL MANTLE

Natural chemical weathering of the shallow portion of the bedrock, due to percolating water, has chemically altered many of the original rock-forming minerals to clays and other secondary minerals. This has resulted in the development of shallow saprolite (weathered bedrock) and the overlying soil mantle. The thickness of the soil and saprolite is generally 5 to 20 feet, but it varies considerably over short distances. In highly fractured zones, enhanced groundwater storage and movement has accelerated the breakdown of the rock-forming minerals and has caused formation of a thicker saprolitic deposit.

2.3 AQUIFER RECHARGE

Precipitation infiltrating through the soil on site and/or in up-gradient areas is the primary source of aquifer recharge to the on-site supply well. Generally, overlying soil horizons act to absorb and then slowly release infiltrating precipitation. However, in areas where fracture zones have formed, percolating groundwater can reach the water table quickly. A portion of the precipitation percolates downward through the soil mantle and then migrates through narrow, interconnected joints, fractures, faults, and cleavage planes in the bedrock.

2.4 GEOLOGY-CONTROLLED GROUNDWATER FLOW

Generally, bedding plane partings and cross-bedding fracture zones (where present) function as both downward and lateral water conduits. Consequently, such zones receive and transmit water at a rate higher than would otherwise be achievable and, accordingly, are preferential conduits for groundwater flow and contaminant transport.

Despite the bedrock's overall hardness and resistance to erosion, hydraulic permeabilities in bedding planes and fracture zones within the Foreknobs Formation may be several times greater than in surrounding less-fractured rock. This intrinsic characteristic portends the possibility for the existence of specific zones with higher-than-normal well yields, higher-than-normal groundwater flow velocities and higher-than-normal susceptibility to groundwater contamination.

3.0 WATER QUALITY ASSESSMENT

Slaughter and Darling (1962) reported the regional water quality as slightly irony (0.01 to as much as 20 micrograms per liter (mg/l), often hard (up to 227 mg/l), and alkaline with higher-than-average sulfate concentrations (up to 120 mg/l). ALWI interpreted that the slight reddish colors of the local rock exposures as likely attributable to the trace presence of iron.

In general, turbidity and coliform bacteria may be localized concerns but occurrences of these are not regionally pervasive and may be more attributable to well construction problems than due to the geologic formation or hydrologic setting of the well. The potential for adverse water quality problems (e.g., turbidity, bacteria, particulate entrainment) may increase with well yield because of longer development times and greater subsurface weathering often associated with high-yield wells. In such instances, accumulated weathering byproducts, including pathogens, can be agitated and mobilized into the well water supply. Given the age of the existing well, however, it is likely fully developed. Accordingly, ALWI judges that little risk exists for particulate pathogen entrainment.

At this location, ALWI collected baseline groundwater samples on December 2, 1999, in accordance with the MDE sampling procedures specified in COMAR 26.08.05. The site is equipped with an ultraviolet light (UV) disinfection system, though the samples ALWI collected were of raw water prior to the UV unit[1] as specified in COMAR 26.04.01.14. ACHD's laboratory analyzed the samples for those constituents of countywide concern. These included total coliform bacteria as specified in COMAR 26.04.01.11A-C, alkalinity, color, conductance, hardness, iron, manganese, nitrate-nitrite nitrogen (COMAR 26.04.01.14(4)(a)), nitrite nitrogen (COMAR 26.04.01.14(4)(b)), pH, and total dissolved solids.

The results are included as Appendix A, and indicate iron concentrations of 0.8 micrograms per liter (mg/l), which is nearly triple the recommended guideline for treatment. The color of the water is aberrant (25 color units) and not easily explained in light of the other findings (e.g., low turbidity and fairly low total dissolved solids). ALWI suggests that the water be checked for appearance and that bottled water be considered as an interim measure if discoloration occurs and until its source is identified.

The supply appears to be at "moderate risk" for surface water influence as designed in the MDE guidance document, unless the ravine behind the property is of artificial origin and dry except for infrequent heavy precipitation events. According to the guidance document and assuming that this ravine represents a surface water body, two sets of wet weather samples are required to confirm the absence of surface water pathogens.

4.0 DELINEATION

ALWI delineated a surveyed area surrounding this site's well using generalized criteria developed by MDE for non-community supplies, as modified by ALWI (with ACHD consent) based on the specific topographic setting of the site. ALWI began by using a fixed radius of 1,000 feet around the well. From this radial area, ALWI then excluded downgradient areas more than 100 feet from the wellhead as well as areas unlikely to contribute recharge to the well based on intervening

[1] The UV unit appeared not to be operating on the day of sample collection.

streams and/or drainage divides.

The resultant delineation is shown on the "Water Plant Information" survey form (Appendix B) and encompasses approximately 42% of the circle (originally 72 acres in size) or 30 acres.[2] Within an assumed 600 gallons per day per acre (gpd/ac) of annualized groundwater recharge (Slaughter and Darling, 1962, Table 37), 18,000 gallons per day exists within the aquifer beneath this surveyed area. In actuality, the modest demand of this well (doubtlessly less than 1,000 gpd) is more than one full order of magnitude smaller than the surveyed area, lending a high degree of conservatism to this analysis.

Much of the area nearest the well and directly up-gradient of it is impervious, but the low ratio of demand to supply available within the surveyed area appears to ameliorate concerns about the well's sustainable yield during prolonged droughts. An interview with the owner suggested little if any seasonal peaking in demand, and ALWI used this to interpret little, if any, seasonal fluctuation of the surveyed area boundary. No nitrate-nitrogen was detected in the sample ALWI collected. This suggested that the on-site septic system functions adequately and obviated the need for a nitrate balance assessment.

5.0 CONTAMINANT THREATS ASSESSMENT

ALWI identified the following potential sources of contamination within the surveyed area: surficial and subsurface fuel spills, stormwater infiltration along the well's casing, salt from road deicing, improper outdoor storage of petroleum products, and unauthorized dumping. ALWI performed a site reconnaissance and conducted limited personal interviews to identify and describe these potential contaminant hazards.

ALWI performed a site reconnaissance on November 23, 1998. During the reconnaissance, local land use conditions were observed with emphasis on the potential use, storage and disposal practices of hazardous materials and petroleum products. Such conditions may have included visual evidence for present or former spills, stained or discolored ground surfaces, stressed vegetation, unusual odors, or visible UST facilities. Adjacent and nearby properties were also visually scanned for such evidence from the property and nearby public right-of-ways. Off-site properties were not entered. ALWI relied upon the accuracy of historical interview information provided by the owner and his employees to provide context for some of its observations.

5.1 POTENTIAL HAZARDS AT THE WELLHEAD

Design, construction and present condition are important factors in determining a well's

[2] ALWI noted the presence of an unmapped ravine at the rear (south side) of the site, further limiting surficial and shallow contaminant risks from the south. ALWI's observations suggested the possibility that the ravine (and the fill materials on which the Amoco appears to have been constructed) may be artifacts of the construction of the National Freeway (I-68) and not natural features. Therefore, for conservatism ALWI included areas on the far side of the ravine within the surveyed area.

susceptibility to contamination. The existing well completion report (Appendix A) suggests the following:

1. **Casing and Cap** - Steel casing (approximately 6 in. in diameter) was set within a 10-inch diameter hole to approximately 40 feet below ground surface (BGS). ALWI observed that the portion of the casing exposed art ground surface appeared intact and was equipped with a modern-style cap of the type designed to inhibit the entrance of insects into the bore.

2. **Grout** - Neat Portland cement originally sealed the annular space from 40 feet to ground surface. ALWI could not observe the condition of this grout. However, ALWI noted that the well is situated within a depressed area proximal to the existing parking and fueling areas. Stormwater, possibly containing entrained petroleum products and other contaminants, likely enters this low area during heavy rainfall and snowmelt events. If the subsurface grout is missing, bridged, or otherwise degraded, parking lot contaminants could find a "short-circuit" pathway to groundwater by flowing into this low area and then down the outside of the casing.

3. **Water Bearing Zones** - A single water-bearing zone was encountered somewhere between 25 and 100 below grade.

4. **Other Historical Information** - The property owner reported that a vehicular accident had damaged the well's casing several years ago. As a corrective measure, new casing was provided and traffic barriers (i.e., large riprap boulders painted with white and yellow traffic paint) limit the likelihood of a recurrence.

5.2 OTHER LOCAL CONTAMINATION RISKS

On November 23, 1998, ALWI observed several potential contamination sources in the delineated surveyed area. No discharge to groundwater has been confirmed by any of the facilities or practices ALWI observed. ALWI has ranked its observations in decreasing order of overall relative risk. ALWI provides specific recommendations at the conclusion of each respective observation or interpretation.

5.2.1 Underground Storage Tanks

Gasoline and diesel fuels are sold at this facility. ALWI observed tanker truck operations during the day of its reconnaissance but the driver declined to be interviewed. The driver filled several USTs that are located within a poured concrete pad. The pad is less than 200 feet of the well and is situated in a likely cross-gradient direction. The precise number, design, age and condition of these USTs could not be verified.

Later, the owner provided ALWI a brief interview in which he said that UST facilities were modernized when the distributorship changed brands from Exxon to Amoco within the past 1-2 years. ALWI also observed one abandoned 10,000 gallon UST, without visible perforations, at ground surface within 75 feet of the wellhead. According to the owner, this UST was removed from service at the time of the brand change.

Based on past experience, ALWI has observed that UST sites may achieve compliance and pass leakage detection tests even with low to moderate degrees of subsurface petroleum contamination. Given the proximity of the UST field to the well, analytical testing to confirm the absence of gasoline and diesel oil constituents (e.g., benzene, toluene, ethylbenzene, xylene, methyl-tertiary-butyl ether [MTBE], naphthalene, and totals for both gasoline- and diesel-range petroleum hydrocarbon compounds seems appropriate[3].

Such testing should occur during late winter and late summer to assess variances due to seasonal differences in groundwater elevation. Periodic monitoring and other corrective actions as necessary should then continue based on the findings.

5.2.2 Other Potential Hazards

1. **Subsurface Disposal Facilities** – Older septic tanks of the type likely present may have seams. Though the low nitrate concentrations in groundwater indicate no present release, property ownership interest should embark on a regularly scheduled program of pump-outs. When the septic systems needs replacement, the tank should be replaced with a seamless model and no facilities should be relocated uphill or within 100 feet of the well.

2. **Above-Ground Fuel Tank** – ALWI observed an above-ground fuel storage tank (AST) that contains kerosene for retail sale. This AST appeared in good condition. ALWI recommends regular maintenance of this fuel storage and delivery system, including development of specific protocols to be employed in case of a leak or overfill.

3. **Storage of Highway Maintenance Supplies** – ALWI observed 55-gallon steel drums for oil, traffic paint and other environmentally sensitive liquids at various locations within the surveyed area. Some drums were full, some partially full and some empty. Most of the drums were empty, partially crushed, and appeared within extensive fill materials located on the side of an embankment at the rear (southern) side of the property. However, the following drums warranted particular concern because they were prone to rusting in an outdoor, on-ground location, they lacked secondary containment, and they were open to the sky such that rainwater could commingle and entrain their contents:

    - **Oil Drum** - ALWI observed 55-gallon steel drum full of a black liquid with a

[3] Any finding of petroleum-contaminated groundwater must be reported to the MDE Oil Control Program. Such a report would open (or reopen) an Oil Control Program case file. MDE Oil Control Program representatives may order additional sampling, UST tightness testing, UST removal(s), monitoring well drilling, and/or other investigative and remedial measures. ALWI suggests that site ownership and ACHD interests consult legal counsel before taking any action that could have adverse financial or environmental liability consequences.

moderate petroleum odor (possibly motor oil) 200 feet west and uphill from the well. This drum was full to the point of overflowing. Some oil staining was visible on the ground nearby.

- **Paint Drums** - ALWI observed seven 55-gallon drums containing white traffic paint. These drums were also uphill from the well, within 100 feet of the oil drum.

4. **Subsurface Fill Materials** - ALWI observed an extensive accumulation of weathered asphalt on the dies of the ravine south of the property as well as in the areas south and southwest of the well. The asphalt pieces were irregularly shaped, randomly oriented and varied in approximate diameter from 0.5 to 10 feet. ALWI also observed discarded sheet metal, 55-gallon drums, mattresses, gypsum board, plastic liquid containers, scrap lumber and tires mixed with the asphalt. No hazardous materials, petroleum products or stressed vegetation was observed in the fill area. Subsurface fill constituents may include hazardous materials and/or petroleum products, particularly considering that most of the fill is between 30 and 60 feet lower in grade than the present gas station. Additionally, the presence of irregular pieces of broken asphalt and construction rubble may have geotechnical implications for the long-term stability of the UST field.

5. **Highway and Parking Area Deicing** – Highway and parking area deicing practices may increase a seasonal risk of sodium and chloride contamination. The State Highway Administration (SHA) unlikely to curtail or otherwise change deicing practices on nearby state and federal highways. However, consideration should be given to using non-chemical abrasives on the parking lot for deicing to the degree possible.

6.0 CONCLUSION AND RECOMMENDATIONS

ALWI did not find acute conditions suggesting non-potability of a type warranting immediate reporting, resampling, or other emergency corrective action. ALWI developed the recommendations within this section following MDE guidelines but also in light of site-specific practicalities. For example, ALWI acknowledges that the on-site well cannot be relocated so far from the USTs to eliminate all risk of petroleum contamination of the groundwater supply. ALWI also acknowledges that the UST operations are essential to the existing commercial operation.

6.1 SUPPLEMENTAL INVESTIGATIVE MEASURES

Property ownership interests should collect and analyze groundwater samples for the potential presence of contaminants likely originating from on-site operations (e.g. petroleum constituents, sodium and chloride, and indicators of groundwater under the direct influence of surface water [e.g., turbidity, temperature, and bacteria analyses performed daily for four consecutive days immediately after a 0.5-inch rainfall event]. Petroleum constituent sampling should be repeated during both seasonal high and low water table conditions, then repeated annually or more frequently if warranted by the findings.

6.2 Source Reduction Measures

Depending on the results of the analyses indicated above, property owner interests may find greater cost-effectiveness in converting to bottled sources of potable water. Retrofitting the existing groundwater supply with filtration or other costly treatment measures, if warranted by the supplemental analyses recommended herein, may not be cost-effective considering the nature and quantity of on-site uses.

If groundwater continues to be relied upon for potable supply purposes, the following source reduction measures should be considered:

1. **Improve Grouting and Redirect Stormwater** – ALWI recommends that the depressed area surrounding the well be filled with cement or other similar non-porous material. Berms and/or curbing should be considered as an additional means to prevent stormwater from entering the aquifer along the outside of the well casing.

2. **Remove Outdoor Drums of Liquids from Surveyed Area** - The continued practice of the indiscriminate storage and uncontrolled happenstance disposal of these materials is antithetic to wellhead protection. ALWI recommends that the SHA and/or the Allegany County Roads Department be contacted and encouraged to remove these containers and/or to store them in precise accordance with MDE, manufacturers' and distributors' recommendations.

3. **Remain Vigilant About Fuel Handling and Storage** – Property ownership interests should remain abreast of UST and AST systems regulations. Any release or suspected release should trigger an additional round of sampling with continued monitoring at more frequent intervals until the hazard is abated.

4. **Use Discretion in Parking Lot Deicing** - The degree to which the use of conventional road salt should be predicated on existing sodium and chloride concentrations. A wise precaution would involve the use of non-chemical abrasives to replace some salt usage. The degree of salt in the mix can be guided, in part, on sampling results.

7.0 SELECTED REFERENCES

Glaser, John D., 1994, Geologic Map of the Bellegrove Quadrangle, Allegany and Washington Counties, Maryland: Maryland Geological Survey, 1:24,000.

MDE Public Drinking Water Program, 1998, Transient Water System Operations Guidance; Guidance For Counties With Delegated Responsibilities (Draft), 45p.

Slaughter, Turbit H. and John M. Darling, 1963, The Water Resources of Allegany and Washington Counties: Maryland Department of Geology, Mines, and Water Resources, Bulletin 24, p. 408.

NONCOMMUNITY WATER SUPPLY SANITARY SURVEY

1. System Name: Sideling Hill Amoco

2. WAS: 80

3. System Information:

Address: Route 1, Box 54A

Little Orleans, Maryland

Phone No.: (301) 478-2544

4. ADC Map/Grid: N/A

5. Tax Map/Plat: N/A

6. Population:

Transient ______
Regular 2-3
Total 2 +/-

7. Property Information:

Owner's Name R. Hoopengardner & J. True

Address: Route 1, Box 54

Little Orleans, Maryland

Phone No. (301) 478-2544 (717) 294-3362

8. No. Service Connections: 1

9. Type of Facility:

Food Service X
Church ______
Campground ______
Daycare ______
Other (specify) Gas Station

10. Contact Person:

Name: J. True

Phone No. (717) 294-3362

11. Operator:

Name: N/A

Cert. No. ______

12. Sample History (Has the system had any violations?):

Bacteria: None apparent or reported

Nitrate: None apparent or reported

SURVEY RESULTS

13. Comments on System, Recommendations:

Depending on the results of the analyses indicated above, property owner interests may find greater cost-effectiveness in converting to bottled sources of potable water. Retrofitting the existing groundwater supply with filtration or other costly treatment measures, if warranted by the supplemental analyses recommended herein, may not be cost-effective considering the nature and quantity of on-site uses.

If groundwater continues to be relied upon for potable supply purposes, the following source reduction measures should be considered:

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2. **Remove Outdoor Drums of Liquids from Surveyed Area** - The continued practice of the indiscriminate storage and uncontrolled happenstance disposal of these materials is antithetic to wellhead protection. ALWI recommends that the SHA and/or the Allegany County Roads Department be contacted and encouraged to remove these containers and/or to store them in precise accordance with MDE, manufacturers' and distributors' recommendations.
3. **Remain Vigilant About Fuel Handling and Storage** – Property ownership interests should remain abreast of UST and AST systems regulations. Any release or suspected release should trigger an additional round of sampling with continued monitoring at more frequent intervals until the hazard is abated.
4. **Use Discretion in Parking Lot Deicing** - The degree to which the use of conventional road salt should be predicated on existing sodium and chloride concentrations. A wise precaution would involve the use of non-chemical abrasives to replace some salt usage. The degree of salt in the mix can be guided, in part, on sampling results.

14. Inspected by: Mark W. Eisner

15. Date inspected: 11/23/98

16. System Vulnerability

Protected ______ Vulnerable YES (see report)

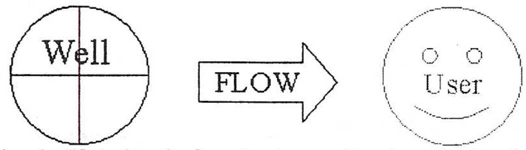
WATER PLANT INFORMATION

17. Type of Treatment:
(Check all that apply)

Disinfection
- Gas Chlorine: ______
- Sodium Hypochlorite ______
- Ultraviolet Radiation ______

Iron Removal ______
Nitrate Removal ______
PH Neutralizer ______
Other ______
Unknown ______

18. System Schematic (Process Flow):



NOTE: This diagram is a simplified schematic of operational process flow observed or described on the date of the reconnaissance. Many water systems possess malfunctioning, disconnected and/or occasionally/regularly-bypassed equipment. Actual treatment processes may differ, therefore, from those shown herein.

19. System Storage:

Ground Storage ______
Elevated Storage ______
Hydropneumatic Tank __X__
Other ______

20. Storage Capacity:

Typical Domestic

21. Untreated water sampling tap?

Yes __x__ No _____

WELL INFORMATION

22. Well Information:

Tag Number: AL-88-0170

Year Drilled: 1991

Casing Depth: 40

Well Depth: 100

Well Yield: 20

Casing Height: 2

Grout Depth: 40

Pitless Adapter? Yes

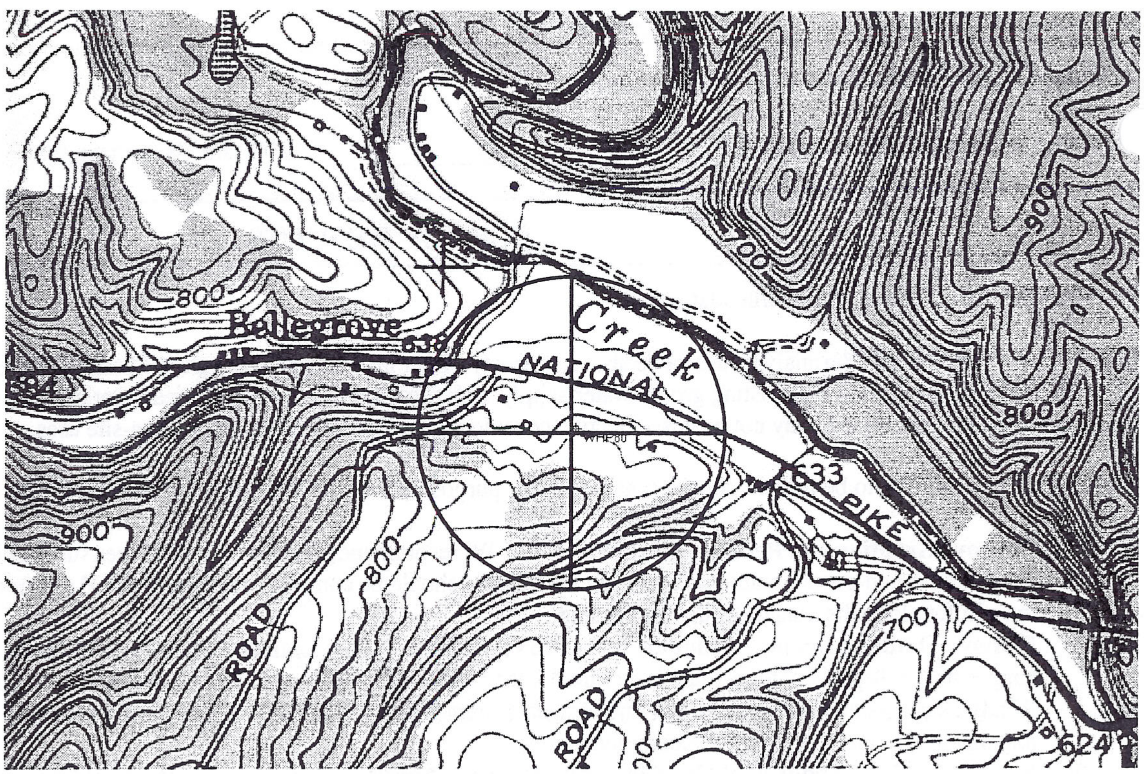
Wiring OK? unknown

Pump OK? unknown

23. Well Type:

Drilled __X__
Driven ______
Dug ______

24. Well Location Diagram (1 in. = 1250 ft.) with Approximate Distances from Potential Contaminant Sources (i.e. septic, sewer lines, structures, petroleum storage, surface water bodies, etc.):



25. Aquifer:

Name: Foreknobs Form.__
GAP #: ______________
Confined _____
Unconfined __X__
Semi-confined _____

26. Quantity Used:

Daily Avg (gpd) < 500
Pumping Rate (gpm) 5 - 10
Hours run per day UNK

27. Well Cap:

Type? Pitless
Seal Tight? _X_
Vented? _X_
Screened? NO
Conduit OK? _X_

28. Casing Diameter:

2" ______
4" ______
6" __X__
Other ______

29. Casing Type:

PVC ______
Metal __X__
Concrete______