

**Contamination Screening Evaluation Report
Minneola Corridor Study
Minneola, Lake County, Florida**



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July 16, 2008
File No. 07-6515A

HNTB Corporation
300 Primera Boulevard
Suite 200
Lake Mary, Florida 32746

Attention: Mr. Luis Diaz, P.E.

Subject: Contamination Screening Evaluation Report
Minneola Corridor Study
Minneola, Lake County, Florida

Dear Mr. Diaz:

As requested, we have completed a Contamination Screening Evaluation Report following the general methodology of Chapter 22 of the Florida Department of Transportation (FDOT) Project Development and Environmental Guidelines for the above referenced site. This report provides our professional opinion relative to the possibility of recognized environmental conditions, as defined in Chapter 22 of the FDOT's Project Development and Environmental Manual, in connection with the proposed section of roadway. This report documents our findings and presents our professional conclusions.

1.0 INTRODUCTION

The objective of our work during this assessment was to identify and evaluate areas of environmental concern through a review of the site history and through site reconnaissance. In addition, we have ranked properties located on or adjacent to the proposed section of roadway approximately 5.7 miles in length bounded on the west by CR 561/US 27 and bounded on the south by Old Highway 50, relative to potential contamination problems which could impact the project.

The preparation of this report involved the following tasks:

- Field observations of the proposed alignment and the area surrounding the alignment.
- Review of relevant regulatory agency records relative to whether hazardous waste disposal areas or hazardous waste generators exist within or adjacent to the proposed alignment.
- Review of aerial photographs to note potential waste sources or disposal areas located within or adjacent to the project alignment.
- Review of Lake County Property Appraiser records available online.

2.0 SITE CONDITIONS

2.1 Site Location

The proposed roadway project is located east of Lake Minneola between U.S. Highway 27 and the Florida Turnpike, in the vicinity of Grassy Lake and Turkey Farm Roads, and Grassy and Plum Lakes. The proposed project is located within Sections 5, 6, 8, 9, 16 and 17, Township 22 South and Range 26 East and is shown superimposed on the Clermont East and Clermont West, Florida U.S.G.S. quadrangle maps presented as Figure 1.

2.2 Review of Available Data

2.2.1 Soil Survey Map

Based on the 1973 Soil Survey for Lake County, Florida, as prepared by the U.S. Department of Agriculture Soil Conservation Service, the site is located in an area mapped as the "Astatula sand, dark surface, 0 to 5 percent slopes", the "Astatula sand, dark surface, 5 to 12 percent slopes", the "Astatula sand, dark surface, 12 to 40 percent slopes", the "Lake sand, 0 to 5 percent slopes", the "Lake sand, 5 to 12 percent slopes" and the "Lake sand, 12 to 22 percent slopes" soil series. The "Astatula sand, dark surface" soil series consists of nearly level to very steep soils occurring on the undulating upland ridges. The internal drainage of the "Astatula sand, dark surface" is excessive and the soil permeability is very rapid throughout. According to the Soil Survey, the seasonal high water table for the "Astatula sand, dark surface" soil series is typically within 120 inches of the natural ground surface.

The "Lake sand" soil series consists of nearly level to sloping soil formed in thick beds of marine and eolian sands. The internal drainage of the "Lake sand" is well drained to excessive and the soil permeability is very rapid throughout. According to the Soil Survey, the seasonal high water table for the "Lake sand, 0 to 5 percent slopes" soil series is typically at a depth more than 120 inches of the natural ground surface.

2.2.2 USGS Quadrangle Map

Based on our review of the Clermont West and Clermont East, Florida, U.S.G.S. quadrangle maps, the existing ground surface elevations along the project alignment varies approximately from +95 to +295 feet NGVD.

2.2.3 Potentiometric Surface

Based on review of the "Potentiometric Surface of the Upper Floridan Aquifer in the St. Johns River Water Management District and Vicinity, Florida" (dated September, 2002) published by the United States Geological Survey, the potentiometric elevation within the project area is approximately +79 feet NGVD, or approximately 16 to 216 feet below the prevailing ground surface elevation.

2.2.4 Regional Geology

Geologic formations in Lake County range from deposits of middle Eocene age (Avon Park Formation) to undifferentiated colluvial and eolian sand of Holocene age. The site is underlain by the following geologic formations in ascending order: 1) Avon Park Limestone, 2) Ocala Limestone, 3) Hawthorn Group, and 4) Unconsolidated deposits.

The Avon Park Formation of middle Eocene age is the oldest formation of the Floridan aquifer. Most high-yield wells in Lake County penetrate the Avon Park Formation which consists typically of porous dolomitic, fossiliferous, marine limestone.

Overlying the Avon Park Formation is the Ocala Group of Upper Eocene age which consists of the Inglis, Williston, and Crystal River Formations. The Ocala Group supplies water for most of the domestic wells in Lake County.

The Hawthorn Group of middle Miocene age ranges from zero to 100 feet thick in Lake County (Knochenmus, 1971), and where present forms a confining bed for the Floridan aquifer. The lithology of the Hawthorn Group is mainly an interbedded mixture of marine sand, clay and limestone with phosphate sand, phosphorite pebbles and lenses of sandy, dolomitic, phosphatic limestone. According to Scott (1988), the elevation of the top of the Hawthorn Group at the site is approximately 0 feet mean sea level (or approximately 100 feet below land surface) and the thickness is approximately 40 feet.

Overlying the Hawthorn Group (where present) are Pleistocene deposits that in Lake County are commonly 100 to 200 feet thick (Knochenmus, 1971). Pleistocene sediments consist typically of fine to medium grained quartz sand and organic sand and clay and are included in the (clastic) surficial aquifer. A layer of colluvial and eolian fine-grained, well-sorted sand of Holocene age overlies the older formation.

2.2.5 Regional Hydrogeology

Groundwater underlying the site consists of two aquifer systems: the surficial and the Floridan. The surficial aquifer is largely an unconfined system while the Floridan aquifer is semi-confined.

The sandy material in the upper part of the clastic unit forms the surficial aquifer system. Those parts of the unit that are permeable yield water that has infiltrated from the land surface and transmit it to adjacent low lands within the surficial aquifer and to the underlying Floridan aquifer as recharge.

Generally, the configuration of the water table of the surficial aquifer is a subdued replica of the configuration of the land surface. The surficial aquifer in Lake County is generally undeveloped. Knochenmus and Hughes estimate the average hydraulic gradient for lateral flow of the surficial aquifer in the area ranges from 0.5 to 1.0 foot per 100 feet.

The water table of the clastic aquifer fluctuates in response to recharge from rainfall, evapotranspiration of water from the water table, lateral discharge of water to lakes and streams, and vertical discharge to the underlying Floridan aquifer.

The confining beds between the two aquifers consist of clayey sands to sandy clays within the lower part of the undifferentiated deposits and the Hawthorn Group where present. The Hawthorn Group is composed largely of beds of light gray to gray, calcareous clay alternating with beds of cream to gray sandy limestone and phosphate sands. The clay deposits yield little or no water to wells. Where the clay is present in considerable thickness, it generally constitutes an effective confining bed for water in the underlying limestone. The Hawthorn Group ranges from 0 to 100 feet thick in Lake County.

Underlying the surficial aquifer and the confining beds is a thick sequence of limestones and dolomitic limestones which forms the Floridan aquifer. The Floridan aquifer is under artesian pressure in most areas and is limited by the confining bed described above. According to Knochenmus (1971), the top of the Floridan aquifer is 100 to 200 feet below land surface at the site but the potentiometric surface is 70 to 75 feet above mean sea level. The Ocala Limestone consists of soft to hard, cream to tan-gray or very light brown relatively pure limestone. In terms of water-

bearing character, it is the second most productive formation in Lake County and ranges in thickness of 0 to 100 feet. The Avon Park Limestone is a brown, dolomite, porous limestone. The Avon Park Formation of the Floridan aquifer is the most productive water-bearing formation in the County due to its high permeability and thickness ranging from 400 to 2,000 feet.

The Floridan aquifer is recharged by water which moves downward through the clastic aquifer and the confining bed.

On the basis of transmissivity determinations of various investigations in adjoining areas, and also on well-yield data for Lake County, the transmissivity of the upper part of the Floridan aquifer probably averages about 40,000 feet squared per day over the County. (Knochenmus and Hughes, 1976).

REFERENCES

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- Scott, T.M. (1988). The Lithostratigraphy of the Hawthorn Group (Miocene) of Florida. Florida Geological Survey Bulletin 59, 148p.
- Ad Hoc Committee (1986). Hydrogeological Units of Florida. Florida Geological Survey, Special Publication No. 28.
- Scott, T.M., Lloyd, J.M. and Maddox, G. (1991). Florida Groundwater Quality Monitoring Program Hydrogeological Framework. Florida Geological Survey Special Publication No. 32.

2.3 Site and Vicinity Characteristics

Field observations of the project corridor and adjacent properties were performed on July 9, 2008. Photographs taken during our field visits are included in Appendix I. An aerial photograph depicting the proposed project comidor, provided by HNTB, is included as Figure 2.

During our drive through of adjacent properties, development surrounding the project corridor was observed for potential contamination sources that could affect the area. The corridor begins at the intersection of U.S. Highway 27 and North Grassy Lake Road (a.k.a Citrus Grove Road) and runs east towards Turkey Farm Road (a.k.a. Hancock Road) and then runs south along Turkey Farm Road just south of Old C.R. 50. Development along the project corridor consisted primarily of pastureland, citrus groves and residential properties. A table including the property uses observed along the alignment is provided as Table 1. The Map I.D. included on Table 1 corresponds to the numbers on Figure 2.

2.4 Current Land Uses

At the time of our field observation, lands adjacent to the alignment consisted of single-family residences, citrus groves, pastureland, planted pines, newly constructed subdivisions and a few commercial properties as listed in Table 1. Non-residential, structurally developed properties included the Clermont Congregation of Jehovah's Witnesses and a business named Crown Marine.

2.5 Past Land Uses

Historical aerial photographs dating back to 1941 (the earliest readily available aerial photograph), were reviewed at the Lake County mapping office and were also obtained from Florida Aerial Online and Terraserver.com. Details of the aerial photograph review are included in Section 4.2. Generally, the properties adjacent to the project alignment appear to have been pastureland, citrus groves or planted pines prior to any current residential and/or commercial development.

3.0 SITE RECONNAISSANCE

The field observations of the alignment and adjacent properties were performed on July 9, 2008. Observations of the project corridor and adjacent properties were conducted by Ardaman & Associates' environmental scientist Lisa J. Tully to assess whether on-site conditions indicated the potential for hazardous or toxic waste contamination.

The North Grassy Lake Road alignment was observed beginning at US Highway 27 going east, following Grassy Lake Road until the intersection with Turkey Farm Road. The Clermont Congregation of Jehovah's Witnesses was located approximately 250 yards east of the intersection of US 27 and North Grassy Lake Road, and the Crown Marine property was located approximately 380 yards east of the intersection. Both the Jehovah's Witness property and the Crown Marine facility are located on the northern side of Grassy Lake Road. Numerous residences were noted along North Grassy Lake Road for the first 2/3-mile east of the intersection.

Other land uses adjacent to North Grassy Lake Road and Turkey Farm Road include citrus groves, planted pines, and pasture land. No obvious contamination, drums, tanks, hazardous waste containers, etc. were noted, and no stressed vegetation or stained soils were observed near the alignment.

Heading south along Turkey Farm Road, approximately a mile and a half before Old C.R. 50, numerous single family housing developments were observed along the southwestern side of the road, including the Sky Ridge Valley and Pine Bluff subdivisions. Two additional subdivisions were being developed. No obvious contamination, drums, tanks, hazardous waste containers, etc. were noted, and no stressed vegetation was observed near the alignment.

Along Old C.R. 50, south of Turkey Farm Road, the Country Ridge subdivision was noted on the southern side of the road. Undeveloped pastureland was located to the north of the alignment. No obvious contamination, drums, tanks, hazardous waste containers, etc. were noted, and no stressed vegetation was observed near the alignment.

4.0 RECORDS REVIEW

In addition to our review of Federal and State Record databases, FirstSearch prepared a report summarizing the location of EPA Region IV, CERCLA, National Priorities List (NPL) (hazardous waste sites), RCRA (hazardous waste generator) sites, Registered Storage Tanks, Leaking Storage Tanks, Dry Cleaners, and Emergency Response Sites. FirstSearch's report, compiled from the U.S. Environmental Protection Agency (EPA) and Florida Department of Environmental Protection (FDEP) databases, was reviewed to research whether the subject site or surrounding properties are included on these lists, as well as other lists which are described below. A summary of the FirstSearch report is provided as Appendix II.

4.1 Federal and State Record Sources

4.1.1 Federal Records Sources

We have reviewed the EPA Region IV February 8, 2008, CERCLA and NPL (hazardous waste sites) and the June 6, 2006 RCRA (hazardous waste generator) lists to determine whether properties located within or adjacent to the project corridor are included on these lists. There are no NPL or RCRA CORRACTS TSD (Corrective Action TSD) sites located within one mile of the proposed alignment. Additionally, there are no CERCLA sites within approximately 1/2 mile of the project alignment.

Two RCRA-listed hazardous waste handlers are located in the vicinity of the alignment. Included on the RCRA list are:

Map I.D.	Facility I.D.	Facility Name	Facility Address	Type of Generator ¹	Open File ²
7	FLD984232165	Fields Equipment Co., Inc.	17215 N. US Hwy 27	SQG	No
8	FLT950050500	Mike Langely Citrus	17628 US Hwy 27	SQG	No
¹ Type of RCRA Handler: SQG - Small Quantity Generator CES - Conditionally Exempt SQG CLO - Closed NHR - Non-handler ² Compliance File Open at DEP's Central Florida District office: Typically a file is opened when a site has been inspected or a complaint has been filed.					

Small Quantity generators (SQG's) generate 220 to 2,200 pounds of hazardous waste per month. According to FirstSearch's report and our review of FDEP's Oculus website, no violations have been reported and no enforcement actions have been taken relative to these two facilities.

4.1.2 State Record Sources

A January, 2007, list of the Waste Cleanup files available at the DEP's Central Florida District Office was reviewed relative to whether the location of non-CERCLA sites near the project alignment currently undergoing hazardous waste assessment or remediation. Based on our review of the list, there are no Waste Cleanup sites located within approximately 1/2 mile of the project alignment.

Based on our review of DEP's Dry Cleaning Solvent Cleanup Program Sites list dated July, 2007, no contaminated facilities are located within 1/2 mile of the project alignment.

DEP's Stationary Tank and Contamination Monitoring (STCM) database (06/02/08) was searched relative to whether petroleum storage tanks are registered for the properties located within and adjacent to the project alignment. The DEP's STCM was also reviewed for reported instances of petroleum contamination within and near the project alignment. Based on our review of the database, the following 3 facilities located adjacent to the proposed alignment are registered as having petroleum storage tanks, although none of these facilities have reported petroleum contamination:

Map I.D.	Facility ID	Facility Name	Facility Address	Discharge Date(s) ¹	Score ²
9	35/8622955	Lykes Bros. Inc. Citrus Mgmt Div.	Rt 2; Turkey Farm Rd	--	n/a
N/A	35/8628273	Lykes Bros. Inc.	Off US 19	--	n/a
6	35/9201049	SECO Properties	N. Grassy Lake Rd.	--	n/a
7	35/8945306	Fields Equipment Co., Inc.	17215 US Hwy 27	--	n/a
¹ Only facilities with reported discharges (based on review of the SCTM database) have discharge dates. ² Only facilities with reported contamination have a priority score. As indicated, a Priority Score does not mean that the site is eligible for State Cleanup Funding.					

The registered aboveground and underground storage tanks located at these above-listed facilities are included in Appendix III.

Note that according to the latitude and longitude provided on the STCM database, the Lykes Bros. Inc. facility (off US 19) is not located within ½ mile of the project alignment and the Lykes Bros. Inc. Citrus Mgmt Div. Facility (Rt 2; Turkey Farm Rd) is located in the vicinity of US Hwys 50 and 27. The FirstSearch report places both Lykes properties at the same location designated as Map I.D. 9 on Figure 2; and these facilities are registered as having had 10,000 and 20,000-gallon above-ground storage tanks. This capacity tank might be visible on an aerial photograph, but no structures or tanks appear to have been located in the vicinity of the FirstSearch location based on our historical aerial photograph review.

The FirstSearch report places the SECO Properties facility at the northeast corner of North Grassy Lake Road and US Hwy 27 and the latitude and longitude provided on the STCM database place the property further east on the north side of North Grassy Lake Road. Both of these potential locations are noted on Figure 2 and the most likely location is the latter as structures are located there and no structures appear to have been located at the northeast corner of that intersection in current or historical aerial photographs reviewed.

Based on our review of the STCM database and files available for review on Oculus (DEP’s online files), no contamination has been reported at the Lykes Brothers facilities or at the SECO Properties and Fields Equipment facilities.

The March, 2008 issue of DEP’s Water Assurance and Compliance System (WACS) Solid Waste Facility Directory was reviewed to ascertain the location of landfills, incinerators, industrial waste disposal facilities, transfer stations and other solid waste facilities. Based on our review, no such facilities are located within ½ mile of the proposed alignment.

4.2 Aerial Photograph Review

Aerial photographs available at the Lake County mapping office, Florida Aerial Online and Terraserver.com were reviewed to study the land use within, and in the vicinity of, the subject site to explore whether activities or businesses could have affected soil or groundwater quality. The following readily available aerial photographs were reviewed for the existence of potential sources or features indicative of contamination:

Aerial Year	Scale	Quality
1941	on-line	Fair
1947	on-line	Fair
1958	on-line	Fair
1972	1" = 400'	Fair
1979	1" = 400'	Fair
1984	1" = 400'	Fair
1987	1" = 400'	Fair
1990	1" = 400"	Fair
1994	1" = 400'	Fair
2001	on-line	Good
2006	on-line	Good

The western portion of the project alignment from US Hwy 27 to the center of Grassy Lake was not available for aerial photograph review in the years 1941, 1947 or 1958.

Neither North Grassy Lake Road or Turkey Farm Road appear developed in the 1941 aerial photograph. The properties in the vicinity of the project alignment appear undeveloped and grassed and possibly in use as pastureland.

In the 1947 aerial photograph, citrus groves appear on the western portion of the project alignment and north of Old SR 50 along the southern portion of the project alignment. A few residences appear developed where North Grassy Lake Road will turn south, once developed. The remainder of the vicinity of the project alignment appear unchanged from the 1941 aerial photograph.

In the 1958 aerial photograph, additional citrus groves appear east of Grassy Lake and planted pines appear developed on the east side of future Turkey Farm Road. The west side of future Turkey Farm Road and the north side of future North Grassy Lake Road appear undeveloped and cleared for possible agricultural use in the future. Several low-lying areas, as observed on the USGS quadrangle map, appear visible on the east and west sides of future Turkey Farm Road.

In the 1972 aerial photograph, US Hwy 27 appears under construction and both North Grassy Lake and Turkey Farm Roads appear developed as unpaved roads. The majority of the project alignment and vicinity appears developed with citrus groves with the exception of the planted pines on the east side of Turkey Farm Road and a few residential structures scattered throughout and a few undeveloped areas that appear to have been cleared for possible agricultural use in the future. No structures, such as grove equipment sheds or well pump sheds, appear visible within the groves in the vicinity of the project alignment.

In the 1979 aerial photograph, some citrus groves appear to have been cleared on the west side of Turkey Farm Road just north of Plum Lake. In the 1984 aerial photograph, the groves and planted pines appear more sparse along Turkey Farm Road. Sections 5, 6, 7 and 8, which comprise the northern portion of the project alignment, were not available for review.

In the 1987 aerial photograph, some of the existing residential structures appear developed along North Grassy Lake Road. In the 1990 aerial photograph, additional residential structures appear visible along the project alignment although the majority of the project alignment vicinity still appears developed with citrus groves and planted pines.

In the 1994 aerial photograph, the church located just east of US Hwy 27 first appears developed and the groves appear more sparse. In the 2001 aerial photograph, the area immediately east of the northeastern corner of Grassy lake appears to have been cleared and the southern portion of Turkey Farm Road appears developed with several residential structures as well as the Country Ridge subdivision.

In the 2007 aerial photograph, Pine Bluff subdivision appears developed and the majority of the west side of Turkey Farm Road appears to have been cleared for the development of additional residential subdivisions.

The properties along the alignment appear essentially unchanged from the 2007 aerial photograph as during our July 9, 2008 site reconnaissance.

5.0 DETERMINATION OF POTENTIAL

In accordance with Chapter 22 of the Florida Department of Transportation's Project Development and Environmental Manual, each property within and adjacent to the proposed project alignments must have a conscious determination of the contamination potential.

All properties should be assigned a rating of:

- (1) **No**
- (2) **Low**
- (3) **Medium, or;**
- (4) **High**

These ratings are explained as follows:

- (1) **No.** After review of all available information, there is nothing to indicate contamination would be a problem. It is possible that contaminants could have been handled on the property; however, all information (DEP reports, monitoring wells, water and soil samples, etc.) indicates problems should not be expected. Examples of operations that may receive this rating are:
 - 1) A gas station that has been closed and has a closure assessment or contamination assessment documenting that there is no contamination remaining.
 - 2) A wholesale or resale outlet that handles hazardous materials in sealed containers which are never opened while at this facility, such as spray cans of paint at a "drug store".
- (2) **Low.** The former or current operation has a hazardous waste generator identification (ID) number, or deals with hazardous materials; however, based on all available information, there is no reason to believe there would be any involvement with contamination. This is the lowest possible rating a gasoline station operating

within current regulations could receive. This could also be applied to a retail hardware store which blends paint.

- (3) **Medium.** After a review of all available information, indications are found (reports, Notice of Violations, consent orders, etc.) that identify known soil and/or water contamination and that the problem does not need remediation, is being remediated (i.e., air stripping of the ground water etc.), or that continued monitoring is required. The complete details of remediation requirements are important to determine what the Department must do if the property were to be acquired. A recommendation should be made on each property falling into this category relative to its acceptability for use within the proposed project, what actions might be required if the property is acquired, and the possible alternatives if there is a need to avoid the property.
- (4) **High.** After a review of all available information, there is a potential for contamination problems. Further assessment will be required after alignment selection to determine the actual presence and/or levels of contamination and the need for remedial action. A recommendation must be included for what further assessment is required. Conducting the actual Contamination Assessment is not expected to begin until alignment is defined; however, circumstances may require additional screening assessments (i.e., collecting soil or water samples for laboratory analysis that may be necessary to determine the presence and/or levels of contaminants) to begin earlier. Properties that were previously used as gasoline stations and have not been evaluated or assessed would probably receive this rating.

Based on our observations of the properties within and adjacent to the project alignments and review of regulatory records available at the time of our review, we have assigned ratings to properties within and adjacent to the project alignment based on the criteria set forth in Chapter 22 of FDOT's Project Development and Environmental Manual.

Map I.D.	Business Name	Address	Risk of Contamination
1	Current Citrus Grove	N/A	Low
1A	Former Citrus Grove	N/A	Low
2	Current Planted Pine	N/A	No
2A	Current Planted Pine, Formerly Citrus Grove	N/A	Low
3	Natural Land, Never Citrus or Pine	Turkey Farm Road	No
4	Single Family Residences, Formerly Citrus Grove	Various	Low
5	Clermont Congregation of Jehovah's Witnesses, Formerly Citrus Grove	12205 North Grassy Lake Road	Low
6	Crown Marine, Formerly SECO Property, and Formerly Citrus Grove	12245 North Grassy Lake Road	High
7	Fields Equipment Co.	17215 N US Hwy 27	High
8	Mike Langely Citrus	17628 US Hwy 27	No
9	Lykes Bros. Inc.	Rt 2, Turkey Farm Rd	High

The reasons that the properties were assigned the above ratings are summarized below.

Properties Rated as "High" Risk

- SECO Properties (Map I.D. 6) The FirstSearch report places this facility at the northeast corner of North Grassy Lake Road and US Hwy 27 and the STCM database coordinates place the property further east on the north side of North Grassy Lake Road, where the current Crown Marine facility is located. Based on the fact that this facility appears to be located within the project alignment and the tanks may have been removed prior to tank closure requirements, and because no assessment information is available on FDEP's Oculus website and the location of the former tanks is not known, a "high" risk rating was given to this facility. We note that the property mapped as Map I.D. 6 was also formerly a citrus grove. Assessment and possible remedial action may be needed if a portion of the property is planned to be acquired or if excavation and/or dewatering is planned.
- Fields Equipment Co. (Map I.D. 7) and Lykes Bros. Inc. (Map I.D. 9). These properties were reported as having had fuel storage tanks and were similar to the SECO property because there was no closure report documented on FDEP's Oculus website. Therefore, these properties were given a "high" risk rating. These sites are farther from the proposed roadway project than the SECO property; therefore they are less likely to be a concern for this project. However, if any portions of these properties are planned to be acquired or if excavation and/or dewatering is planned on or adjacent to these properties, assessment and possible remedial action may be needed.

Properties Rated as "Medium" Risk

- No properties assessed during this study were assigned a "medium" risk.

Properties Rated as "Low" Risk

- Based on our site observations and review of historical aerial photographs, it appears that the majority of the areas along the proposed corridor are currently or were previously developed with citrus groves (Map I.D. 1, 1A, 2A, 4 and 5). There is a possibility that past agricultural operations related to the citrus grove operations in the surrounding areas may have downgraded regional groundwater quality and resulted in some contaminants residing in near ground-surface soils. However, regulatory agencies are not currently pursuing assessment and remediation of contamination in citrus grove areas, except in extreme cases where concentrated chemicals or contamination such as those associated with pesticide mixing areas, smudge pots, storage areas, etc. are identified. No evidence of a feature which would indicate an extreme case was identified in this limited study. It is Ardaman's experience that contaminant levels are relatively low to below detection limits in soil and groundwater in citrus groves where chemical applications have been within manufacturer's recommendations. Therefore, properties along the alignment that are current or previous groves are considered "low" risk relative to contamination. These properties can not be considered "no" risk due to the potential that excessive chemicals could have been applied.

Properties Rated as "No" Risk

- Several properties along the project corridor have been assigned a contamination risk potential rating of "No", including the planted pines that did not appear to be former citrus

groves (Map I.D. 2) and the area to the east of Plum Lake on the western side of Turkey Farm Road and the property covered by Grassy Lake (Map I.D. 3).

- Based on information provided by FirstSearch, Mike Langely Citrus (Map I.D. 8) is relatively far from the project alignment and was therefore assigned a "no" risk rating based on distance from the project.

6.0 CLOSURE

We have performed a Contamination Screening Evaluation Report for the Minneola Project Corridor beginning along North Grassy Lake Road at US Hwy 27 and heading east and continuing on to Turkey Farm Road south to Old SR 50. The project corridor is located in Sections 5, 6, 8, 9, 16 and 17 of Township 22 South, Range 26 East, in Lake County, Florida. This report presents the results of Ardaman & Associates, Inc.'s assessment, as described herein, and is intended only for use by HNTB Corporation. It was prepared in general conformance with Chapter 22 of the Florida Department of Transportation's Project Development and Engineering Manual and in accordance with our agreement for consulting services.

It has been a pleasure to be of assistance to you on this phase of your project. Please contact us when we may be of further service to you, or should you have any questions concerning this report.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.

h *CHC*

Lisa J. Tully
Environmental Scientist

CHC

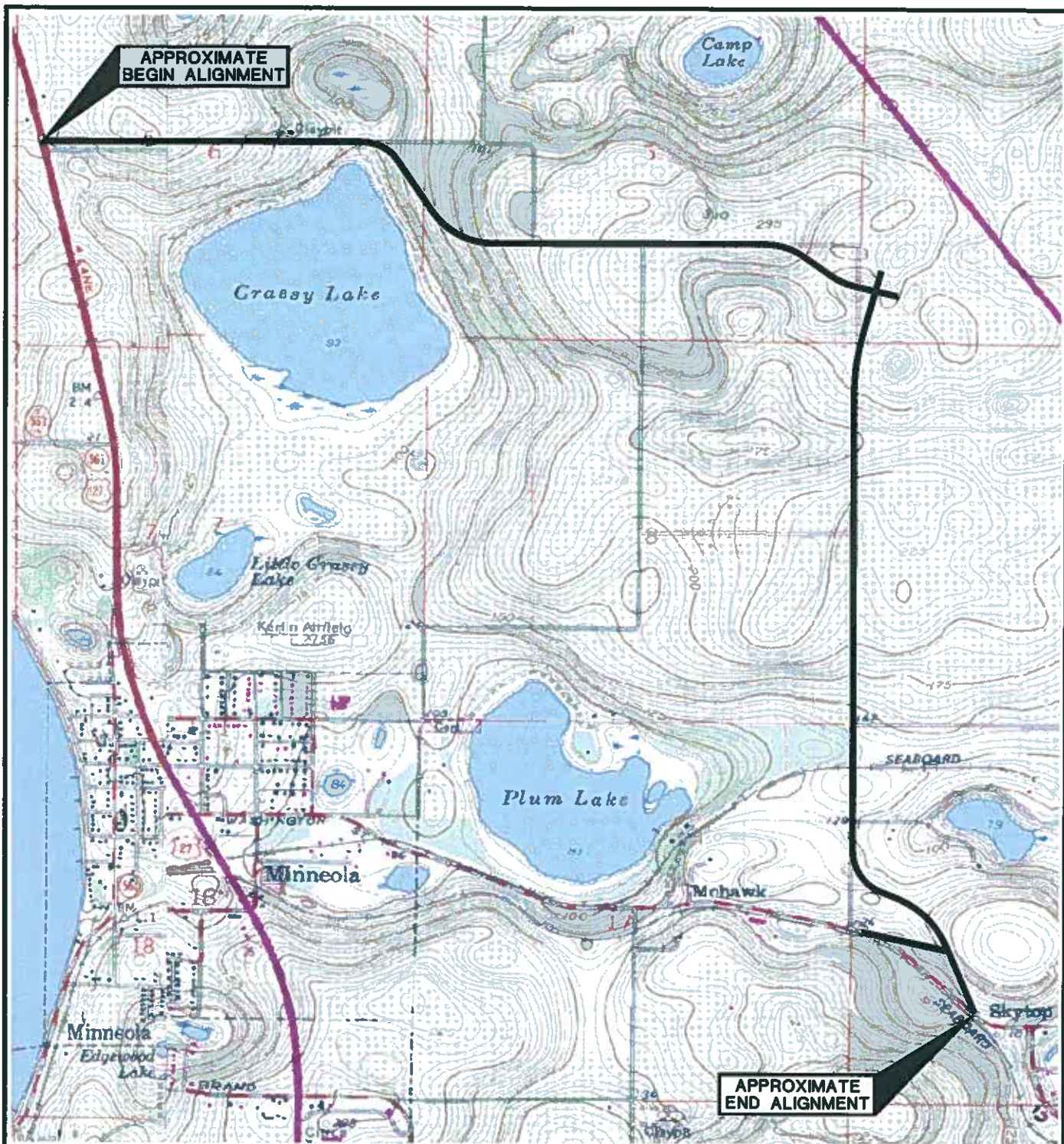
Charles H. Cunningham, P.E.
Senior Engineer
Florida Registration No. 38189

h *CHC*

Kathryn B. Minter, P.G.
Project Geologist

TABLE 1
Adjacent Property Uses
Minneola Corridor Study
Lake County, Florida

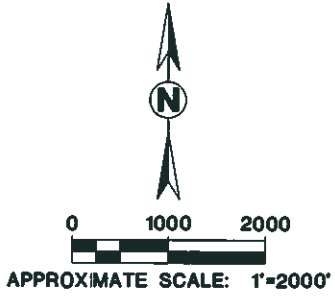
Map I.D.	Business Name	Address
1	Current Citrus Grove	N/A
1A	Former Citrus Grove	N/A
2	Current Planted Pine	N/A
2A	Current Planted Pine, Formerly Citrus Grove	N/A
3	Natural Land, Never Citrus	Turkey Farm Road
4	Single Family Residences, Formerly Citrus Grove	Various
5	Clermont Congregation of Jehovah's Witnesses, Formerly Citrus Grove	12205 North Grassy Lake Road
6	Crown Marine, Formerly SECO Property, and Formerly Citrus Grove	12245 North Grassy Lake Road
7	Fields Equipment Co.	17215 N US Hwy 27
8	Mike Langely Citrus	17628 US Hwy 27
9	Lykes Bros. Inc.	Rt 2, Turkey Farm Rd



SECTIONS 4, 5, 8, 8, 9, 16 AND 17
TOWNSHIP 22 SOUTH
RANGE 26 EAST

OBTAINED FROM U.S.G.S. QUAD MAPS: CLERMONT EAST, FLORIDA 1980
AND CLERMONT WEST, FLORIDA 1989

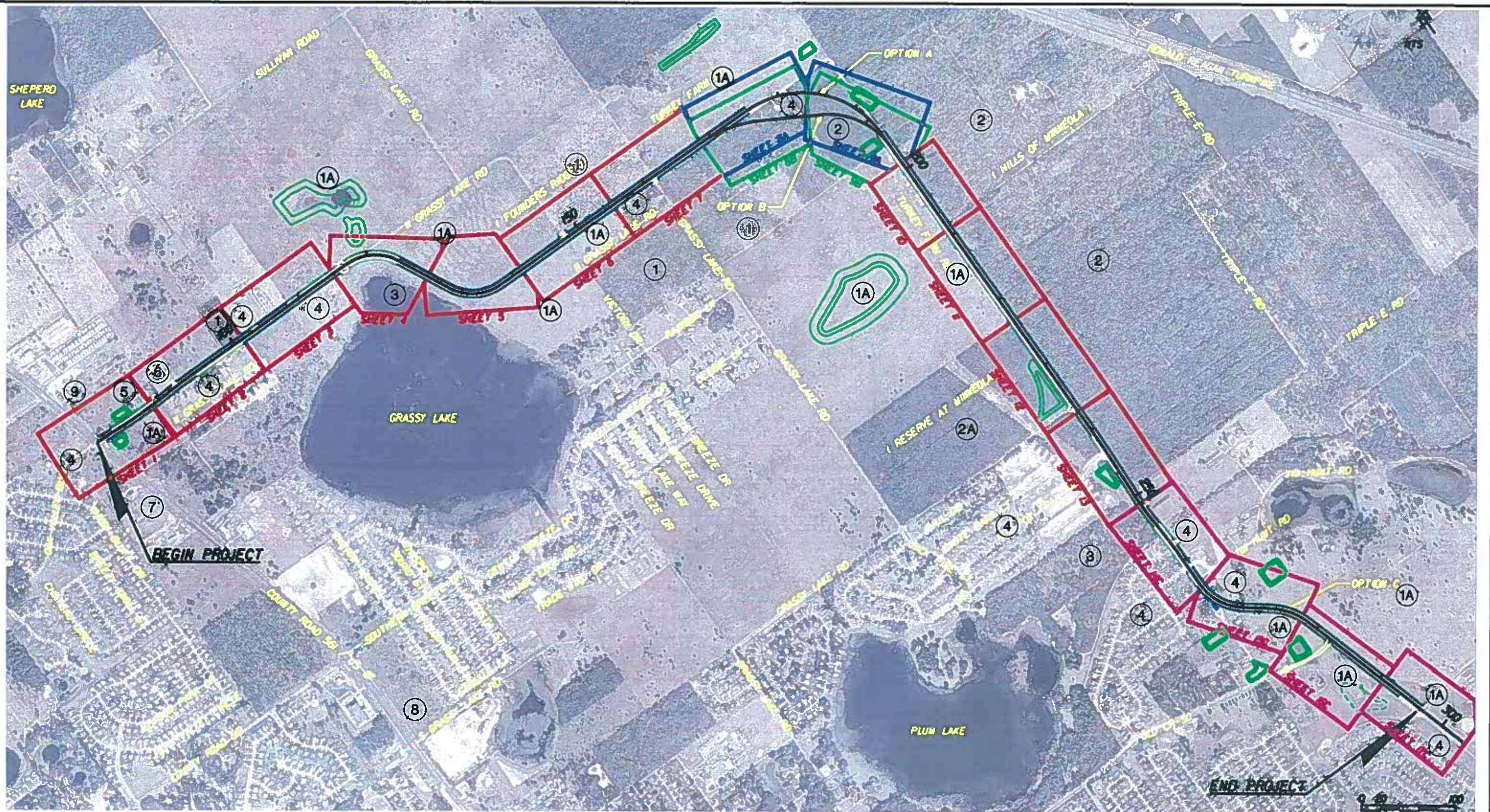
T:\Orlando\07\07-6515A\076515A02.dwg 7/16/2008 4:30:26 PM. chris.drew



QUADRANGLE LOCATION

SITE LOCATION MAP		
Ardaman & Associates, Inc. Geotechnical, Environmental and Materials Consultants		
CONTAMINATION SCREENING EVALUATION REPORT MINNEOLA CORRIDOR STUDY MINNEOLA, LAKE COUNTY, FLORIDA		
DRAWN BY: AOA	CHECKED BY:	DATE: 07/18/08
FILE NO. 07-8515A	APPROVED BY:	FIGURE: 1

T:\Orlando\07\07-6515A\076515A01.dwg 7/16/2008 4:31:23 PM. chris.drew



LEGEND

- ① PROPERTY REFERRED TO IN REPORT AS MAP I.D. NUMBER 1

NOTES:

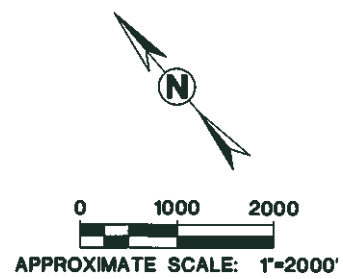
1. AERIAL AND PROPOSED PROJECT CORRIDOR PREPARED AND PROVIDED BY HNTB.
2. REFER TO TABLE 1 IN THE CSER FOR CORRESPONDING PROPERTY USES.

PROPOSED SITE PLAN

Ardaman & Associates, Inc.
 Geotechnical, Environmental and
 Materials Consultants

CONTAMINATION SCREENING EVALUATION REPORT
 MINNEOLA CORRIDOR STUDY
 MINNEOLA, LAKE COUNTY, FLORIDA

DRAWN BY: CD	CHECKED BY:	DATE: 07/01/08
FILE NO. 07-6515A	APPROVED BY:	FIGURE: 2



APPENDIX I

Photographs

**Site Photographs
Minneola Corridor Study
Minneola, Lake County, FL**



Citrus Grove Typical of Area



Facing East on North Grassy Lake Rd.



Facing South on Turkey Farm Rd.

APPENDIX II

Summary of First Search Report

FirstSearch Technology Corporation

Environmental FirstSearch™ Report

Target Property: Minneola Corridor Study

MINNEOLA CORRIDOR ST

MINNEOLA FL 34711

Job Number: 07-6515A

PREPARED FOR:

Ardaman and Associates Inc

8008 S Orange Ave

Orlando FL 32807

03-28-08



Tel: (407) 265-8900

Fax: (407) 265-8904

Environmental FirstSearch Search Summary Report

Target Site: MINNEOLA CORRIDOR ST
MINNEOLA FL 34711

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	02-08-08	0.25	0	0	0	-	-	0	0
NPL Delisted	Y	02-08-08	0.25	0	0	0	-	-	0	0
CERCLIS	Y	02-08-08	0.25	0	0	0	-	-	0	0
NFRAP	Y	02-08-08	0.25	0	0	0	-	-	0	0
RCRA COR ACT	Y	06-06-06	0.25	0	0	0	-	-	0	0
RCRA TSD	Y	06-06-06	0.25	0	0	0	-	-	0	0
RCRA GEN	Y	06-06-06	0.25	0	0	1	-	-	8	9
Federal IC / EC	Y	02-08-08	0.25	0	0	0	-	-	0	0
ERNS	Y	12-31-07	0.25	0	0	0	-	-	3	3
Tribal Lands	Y	12-01-05	0.25	0	0	0	-	-	0	0
State/Tribal Sites	Y	01-22-08	0.25	0	0	0	-	-	1	1
State Spills 90	Y	01-03-08	0.25	0	0	0	-	-	1	1
State/Tribal SWL	Y	03-26-08	0.25	0	0	0	-	-	0	0
State/Tribal LUST	Y	01-03-08	0.25	0	0	0	-	-	3	3
State/Tribal UST/AST	Y	01-03-08	0.25	0	3	1	-	-	16	20
State/Tribal EC	Y	02-04-08	0.25	0	0	0	-	-	0	0
State/Tribal IC	Y	02-04-08	0.25	0	0	0	-	-	0	0
State/Tribal VCP	Y	NA	0.25	0	0	0	-	-	0	0
State/Tribal Brownfields	Y	11-01-07	0.25	0	0	0	-	-	0	0
State Other	Y	02-05-08	0.25	0	0	0	-	-	2	2
- TOTALS -				0	3	2	0	0	34	39

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to FirstSearch Technology Corp., certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in FirstSearch Technology Corp.'s databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although FirstSearch Technology Corp. uses its best efforts to research the actual location of each site, FirstSearch Technology Corp. does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of FirstSearch Technology Corp.'s services proceeding are signifying an understanding of FirstSearch Technology Corp.'s searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

**Environmental FirstSearch
Site Information Report**

Request Date: 03-28-08
Requestor Name: ardaman/ltully/dana
Standard: LINEAR

Search Type: LINEAR
 4.00 mile(s)
Job Number: 07-6515A

Target Site: MINNEOLA CORRIDOR ST
 MINNEOLA FL 34711

Demographics

Sites: 39	Non-Geocoded: 34	Population: NA
Radon: NA		

Site Location

	<u>Degrees (Decimal)</u>	<u>Degrees (Min/Sec)</u>	<u>UTMs</u>
Longitude:	-81.738329	-81:44:18	Easting: 427799.215
Latitude:	28.585379	28:35:7	Northing: 3162098.968
			Zone: 17

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 0 Mile(s)	Services:																																		
<table border="1"> <thead> <tr> <th>ZIP Code</th> <th>City Name</th> <th>ST</th> <th>Dist/Dir</th> <th>Sel</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	ZIP Code	City Name	ST	Dist/Dir	Sel						<table border="1"> <thead> <tr> <th></th> <th>Requested?</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Sanborns</td> <td>No</td> <td></td> </tr> <tr> <td>Aerial Photographs</td> <td>No</td> <td></td> </tr> <tr> <td>Historical Topos</td> <td>No</td> <td></td> </tr> <tr> <td>City Directories</td> <td>No</td> <td></td> </tr> <tr> <td>Title Search/Env Liens</td> <td>No</td> <td></td> </tr> <tr> <td>Municipal Reports</td> <td>No</td> <td></td> </tr> <tr> <td>Online Topos</td> <td>No</td> <td></td> </tr> </tbody> </table>		Requested?	Date	Sanborns	No		Aerial Photographs	No		Historical Topos	No		City Directories	No		Title Search/Env Liens	No		Municipal Reports	No		Online Topos	No	
ZIP Code	City Name	ST	Dist/Dir	Sel																															
	Requested?	Date																																	
Sanborns	No																																		
Aerial Photographs	No																																		
Historical Topos	No																																		
City Directories	No																																		
Title Search/Env Liens	No																																		
Municipal Reports	No																																		
Online Topos	No																																		

***Environmental FirstSearch
Sites Summary Report***

Target Property: MINNEOLA CORRIDOR ST
MINNEOLA FL 34711

JOB: 07-6515A

TOTAL: 39 **GEOCODED:** 5 **NON GEOCODED:** 34 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dlr	Page No.
1	UST	LYKES BROS INC CITRUS MGMT DIV 358622955/CLOSED	RT 2 TURKEY FARM RD CLERMONT FL 34711	0.02 NE	1
1	UST	LYKES BROS INC-LYKES CITRUS MGMT D 358628273/CLOSED	OFF US 19 CLERMONT FL 34711	0.02 NE	3
2	UST	SECO PROPERTIES 359201049/CLOSED	N GRASSY LAKE RD MINNEOLA FL 34755	0.06 NE	5
3	RCRAGN	FIELDS EQUIPMENT CO INC FLD984232165/SGN	17215 N US HWY 27 CLERMONT FL 34711	0.15 SW	6
3	UST	FIELDS EQUIPMENT CO INC 358945306/CLOSED	17215 US HWY 27 CLERMONT FL 34711	0.15 SW	7



Environmental FirstSearch

1 Mile Radius from Line
ASTM Map: NPL, RCRA, STATE Sites



MINNEOLA CORRIDOR ST , MINNEOLA FL 34711



Source: 2001 U.S. Census TIGER Files

- Linear Search Line ————
- Identified Site, Multiple Sites, Receptor [Red square with X] [Red square with dot] [Green square]
- NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste [Red square with X]
- Triballand [Red square with X]
- Railroads ————

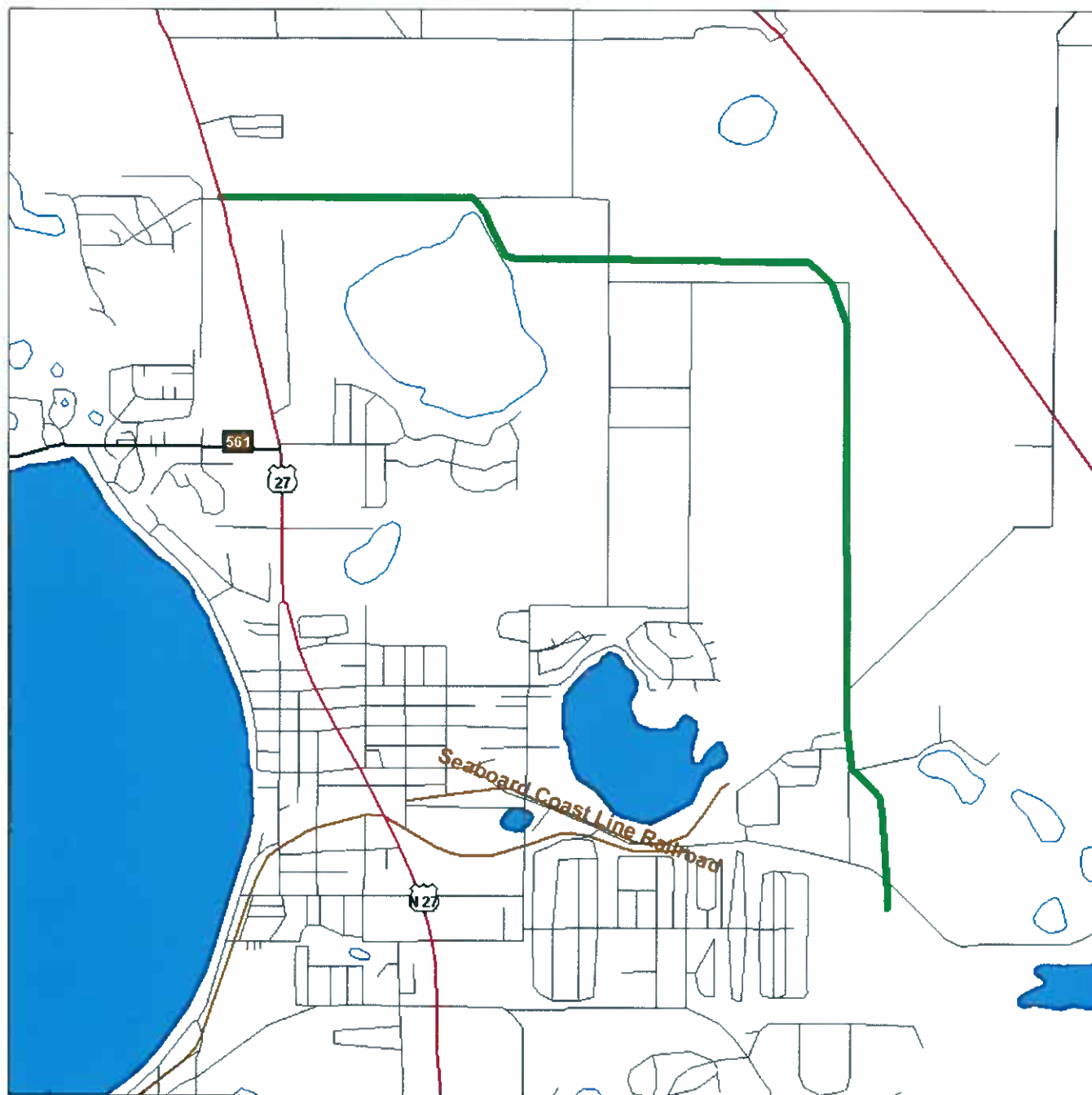


Environmental FirstSearch

.5 Mile Radius from Line
ASTM Map: CERCLIS, RCRATSD, LUST, SWL



MINNEOLA CORRIDOR ST , MINNEOLA FL 34711



Source: 2001 U.S. Census TIGER Files

- Linear Search Line
- Identified Site, Multiple Sites, Receptor
- NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste
- Triballand
- Railroads



Environmental FirstSearch

.25 Mile Radius from Line
ASTM Map: RCRAGEN, ERNS, UST



MINNEOLA CORRIDOR ST , MINNEOLA FL 34711



Source: 2001 U.S. Census TIGER Files

Linear Search Line	
Identified Site, Multiple Sites, Receptor	
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste	
Triballand	
Railroads	



Environmental FirstSearch

.25 Mile Radius from Line
Non-ASTM Map: No Sites Found



MINNEOLA CORRIDOR ST , MINNEOLA FL 34711



Source: 2001 U.S. Census TIGER Files

Linear Search Line	
Identified Site, Multiple Sites, Receptor	
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste Triballand.....	
National Historic Sites and Landmark Sites	
Railroads	

APPENDIX III

Summary of Storage Tank Inventory

Florida Department of Environmental Protection
Bureau of Petroleum Storage Systems
Storage Tank/Contaminated Facility
Name & Address Search

Facility ID#: 8622955

Name: Lykes Bros Inc Citrus Mgmt Div
Rt 2 Turkey Farm Rd
Clermont, FL 32711

Contact: Lykes Bros Inc**Phone:** 904-394-5503**District:** CD**County:** 35 - Lake**Type:** C-Fuel User/Non-Retail**Status:** Closed**Latitude:** 28:32:51.4010**Longitude:** 81:44:35.8562**LL Method:** DPHO-**Account Owner:** Lykes Bros Inc-Citrus Division

Tank #	Size	Content	Installed	Placement	Status	Construction	Piping	Monitoring
1	20000	Vehicular Diesel		ABOVE	Removed from Site			
2	1000	Vehicular Diesel		ABOVE	Removed from Site			
3	1000	Vehicular Diesel		ABOVE	Removed from Site			
4	850	Fuel Oil - Onsite Heat		ABOVE	Removed from Site			

*****Note:**

Construction, Piping, and Monitoring Info not shown for CLOSED tanks (Status A: Closed in Place, B: Removed from the site).

Florida Department of Environmental Protection
Bureau of Petroleum Storage Systems
Storage Tank/Contaminated Facility
Name & Address Search

Facility ID#: 8628273**Name:** Lykes Bros Inc-Lykes Citrus Mgmt Div
Off Us 19
Clermont, FL 32711**Contact:** Lykes Bros Inc.-Lykes Citrus**Phone:** 904-394-5503**District:** CD**County:** 35 - Lake**Type:** C-Fuel User/Non-Retail**Status:** Closed**Latitude:** 28:41:14.9943**Longitude:** 81:47:20.0127**LL Method:** UNVR-Unverified**Account Owner:** Lykes Bros Inc-Citrus Division

Tank #	Size	Content	Installed	Placement	Status	Construction	Piping	Monitoring
1	1000	Unleaded Gas		ABOVE	Removed from Site			
2	10000	Leaded Gas		ABOVE	Removed from Site			
3	10000	Fuel Oil - Onsite Heat		ABOVE	Removed from Site			
4	750	Vehicular Diesel		ABOVE	Removed from Site			

*****Note:****Construction, Piping, and Monitoring Info not shown for CLOSED tanks (Status A: Closed in Place, B: Removed from the site).**

Florida Department of Environmental Protection
Bureau of Petroleum Storage Systems
Storage Tank/Contaminated Facility
Name & Address Search

Facility ID#: 9201049

Name: Seco Properties
N Grassy Lake Rd
Minneola, FL

Contact: Montross, Ken**Phone:** 904-394-1519**District:** CD**County:** 35 - Lake**Type:** C-Fuel User/Non-Retail**Status:** Closed**Latitude:** 28:36:07.9909**Longitude:** 81:44:45.0051**LL Method:** UNVR-Unverified**Account Owner:** Montross, Ken

Tank #	Size	Content	Installed	Placement	Status	Construction	Piping	Monitoring
1	888	Unknown/Not Reported		UNDER	Removed from Site			
2	888	Unknown/Not Reported		ABOVE	Removed from Site			
3	2000	Vehicular Diesel		UNDER	Removed from Site			

*****Note:**

Construction, Piping, and Monitoring Info not shown for CLOSED tanks (Status A: Closed in Place, B: Removed from the site).

Florida Department of Environmental Protection
Bureau of Petroleum Storage Systems
Storage Tank/Contaminated Facility
Name & Address Search

Facility ID#: 8945306**Name:** Fields Equipment Co Inc
17215 Us Hwy 27
Clermont, FL 34711- 1197**Contact:** Jim Reynolds**Phone:** 904-394-7181**District:** CD**County:** 35 - Lake**Type:** C-Fuel User/Non-Retail**Status:** Closed**Latitude:** 28:35:50.0641**Longitude:** 81:45:17.5054**LL Method:** DPHO-Unverified**Account Owner:** Fields Equipment Co Inc

Tank #	Size	Content	Installed	Placement	Status	Construction	Piping	Monitoring
1	1500	Unleaded Gas	03/01/1986	ABOVE	Removed from Site			
2	1500	Unleaded Gas	03/01/1986	ABOVE	Removed from Site			

*****Note:**

**Construction, Piping, and Monitoring Info not shown for CLOSED tanks
(Status A: Closed in Place, B: Removed from the site).**