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NTC ORLANDO
5090.3a

PERMIT APPLICATION FOR CONSUMPTIVE USES OF WATER FOR ACTIVITIES AT
OPERABLE UNIT 4 (OU 4) NTC ORLANDO FL
10/17/2000
CH2M HILL

09.02.04.0001
00686



CH2MHILL

CH2M HILL
4350 W Cypress Street
Suite 600
Tampa, FL
33607-4155
Tel 813.874.0777
Fax 813.874.3056

October 17, 2000

Mr. Richard Kimmel
St. Johns River Water Management District
Orlando Service Center
618 East South Street
Suite 200
Orlando, FL 32801

Subject: Permit Application of Consumptive Uses of Water for Activities at Operable Unit 4, Naval Training Center, Orlando

Dear Mr. Kimmel:

Enclosed please find two copies of a Permit Application for Consumptive Uses of Water and associated \$200 fee for activities related to the proposed modification and upgrade of a groundwater extraction and treatment system located at Area C, Operable Unit 4 (OU-4) of the Naval Training Center (NTC) in Orlando, Florida. A consumptive use permit (CUP) is necessary for this site because the diameters of the final casing of the wells exceeds the criterion of five inches or greater. A location map of the study area at OU-4 is provided as Attachment A to this application.

Remedial activities at OU-4 are being conducted as part of an Interim Remedial Action (IRA) to contain contaminated groundwater currently migrating to Lake Druid. The mechanism for implementation of the IRA has been through the Base Realignment and Closure (BRAC) partnering process, formed by a team of representatives from the United States Environmental Protection Agency (EPA), the Florida Department of Environmental Protection (FDEP), the Southern Division of the Navy, and Navy contractors.

The two 10-inch diameter wells are screened over two intervals in the surficial aquifer. Groundwater is extracted from the upper interval, treated, then recharged to the aquifer through the lower screened interval within the same well bore, e.g., recirculation wells. The system has been in operation since November, 1998. Recirculation rates are less than 2.5 gallons per minute (gpm), which is not sufficient to meet objectives of this action. Therefore, the process is being modified to extract groundwater from the wells, treat it, and discharge it to the sanitary sewer. The configuration of the wells will not be changed for this modification. The proposed system will discharge treated water to the City of Orlando sanitary sewer network under modified Industrial User Discharge Permit No. CO83TA for

Mr. Richard Kimmel

Page 2

October 17, 2000

Operable Unit 4. The proposed maximum extraction rate is approximately 30 gpm from each well; the anticipated operational flow rate range is between 6 and 15 gpm per well.

A work plan memorandum that provides the basis of design and details for the system modification is provided with this CUP application. A plan map that illustrates the site layout, including location of the two remediation wells, and groundwater modeling results are included in the work plan memorandum. Well construction detail diagrams with general geologic logs are provided in Attachment B to the application. We anticipate system start up activities in approximately 4-5 weeks.

An executed deed for the property does not exist and therefore is not included with this application. Discussions with personnel from the Southern Division of the Navy indicated that the transfer of this property was a civil action between the U.S. Army Corps of Engineers (USCOE) and the U.S. Navy, filed on November 20, 1959 (File No. 857ORL) for tract 414-2 consisting of 45.80 acres.

We appreciate the District's attention to this permit application. Please feel free to call me at (813) 874-0777 with any questions or comments you may have.

Sincerely,

CH2M HILL



Steven N. Tsangaris, P.E.

Project Manager

tpa\Document1

Enclosures

xc: Barbara Nwokike/Southern Division NAVFAC (w/o Work Plan Memorandum)
Wayne Hansel/Southern Division NAVFAC (w/o Work Plan Memorandum)
Fernando Ferreira/CH2M HILL (w/o Work Plan Memorandum)
Craig Haas/CH2M HILL (w/o Work Plan Memorandum)

PERMIT APPLICATION FOR CONSUMPTIVE USES OF WATER



Permit Type: Individual CUP <input checked="" type="checkbox"/> Secondary Use <input type="checkbox"/> Standard General CUP <input type="checkbox"/>
Application is for: New use <input checked="" type="checkbox"/> Renewal <input type="checkbox"/> Modification of Existing Permit <input type="checkbox"/>

APPLICANT INFORMATION

ORGANIZATION NAME (please print all responses)

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Same as above AGENT OR CONSULTANT

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WAYNE HANSEL	<i>Wayne Hansel</i>	9-14-00
APPLICANT'S NAME (Please print)	APPLICANT'S SIGNATURE	DATE
If a person other than applicant has completed this form, that person certifies by his signature below that he is acting as an authorized agent of the applicant and his signature will be a certification that he is in fact the authorized agent.		
<i>Steven N. Tsangaris</i>	<i>Steven N. Tsangaris</i>	10/13/00
AGENT'S NAME (Please print)	AGENT'S SIGNATURE	DATE
STEVEN N. TSANGARIS		

Same as applicant **OWNER INFORMATION**

LAST NAME (please print all responses) FIRST NAME

STREET NO. STREET NAME TYPE CITY

STATE ZIP PHONE

SITE INFORMATION

COUNTY ORANGE ACRES OWNED 46
SECTION 19 TOWNSHIP 22 S RANGE 30 E
PROJ. NAME OPERABLE UNIT 4 PROJECT ACRES 6
COUNTY PARCEL NO. NA

TYPE OF USE

DARKEN ALL THAT APPLY
AESTHETIC AGRICULTURAL AQUACULTURAL COOLING AND AIR CONDITIONING
DEWATERING COMMERCIAL AND INDUSTRIAL ESSENTIAL FREEZE PROTECTION
GOLF COURSE RECREATION AREA HOUSEHOLD TYPE LIVESTOCK
NURSERY URBAN LANDSCAPE IRRIGATION WATER BASED RECREATION
UNACCOUNTED FOR WATER OTHER

Permit No. - -

AMOUNT REQUESTED
INCHES PER YEAR _____
MILLION GALLONS PER YEAR _____
MILLION GALLONS PER DAY 0.03208
DATE OF START OF USE OCT 2000

WATER USE MONITORING

All permittees are required to measure their water usage on a continuous basis. All users must report their use using form EN-50 to the District at the intervals specified in their permit. If used, meters must be 95% accurate, verifiable and installed according to manufacturers' specifications. Meters or alternative methods utilized by the water supplier to charge for the water may suffice as a water use monitoring tool.

Alternative methods must be 90% accurate and verifiable. All alternative methods must be approved in advance and in writing by District staff.

<input type="radio"/> Same as applicant	COMPLIANCE ENTITY
---	-------------------

Consumptive Use Permits require the periodic submittal of data to the District. Please provide the name, address and phone number of the person who will be responsible for ensuring that the permitted conditions are met. Submittal of this information does not relieve the permit holder from the responsibility for compliance.

Name: Mr. Wayne Hangel, BRAC Environmental Coordinator
Address: Caretaker site office
2850 Seabee st
Orlando, FL 32803

Phone Number: (407)-895-6714

SECONDARY TYPE USE

Please supply information regarding the source(s) of water for your activities.

1. The name of the supplier of water. _____
2. Is this source of water potable or non-potable? (circle one)
3. What percentage of your total water use is from this supplier? _____
4. If 100% of your water use is not provided from the supplier, please indicate what uses are self supplied.
5. The applicant must also complete other packages which address the requested consumptive use identified in question 4.

Description of Use Classes: Each permit shall be identified with one or more of the following use classifications:

- (a) **Aesthetic use** - the use of water for fountains, waterfalls, and landscape lakes and ponds where such uses are entirely ornamental and decorative.
- (b) **Agricultural use** - use of water for the commercial production of crops or the growing of farm products including, but not limited to, vegetables, citrus and other fruits, pasture, rice and sod.
- (c) **Aquacultural use** - the use or withdrawal of water for cultivation of animal and plant life in a water environment, including but not limited to food fish, aquatic bait, game fish, aquatic plants (i.e. watercress), alligators, tropical fish, shellfish, and turtles.
- (d) **Commercial and industrial process use** - the use of water essential to the production of the goods or services provided by a business establishment.
- (e) **Cooling and air conditioning use** - the use of water for heating or cooling, or for air conditioning.
- (f) **Dewatering use** - the removal of water from a specific area to facilitate mining or construction.
- (g) **Essential use** - the use of water strictly for fire fighting purposes, health and medical purposes and the use of water to satisfy federal, state or local public health and safety requirements.
- (h) **Freeze protection** - the periodic and infrequent use of water to protect agricultural and nursery crops from damage due to low temperatures.
- (i) **Golf course use** - water used to irrigate an establishment designed and used for playing golf.
- (j) **Household use** - the use of water for personal needs or for household purposes such as drinking, bathing, heating, cooking, sanitation or cleaning, whether the use occurs in a residence or in a business or industrial establishment.
- (k) **Livestock use** - the use of water for watering or washing of livestock.
- (l) **Nursery use** - the use of water on premises on or in which nursery stock is grown, propagated or held for sale or distribution or sold or reshipped.
- (m) **Recreation area use** - the use of water for the maintenance and support of intensive recreational areas such as, but not limited to, playgrounds, football, baseball, and soccer fields.
- (n) **Urban landscape irrigation** - the outside watering or sprinkling of shrubbery, trees, lawns, grass, ground covers, plants, vines, gardens and other such flora which are situated in such diverse locations as residential landscaping, recreational areas, cemeteries, public, commercial and industrial establishments, public medians and rights of way.
- (o) **Water based recreation use** - water used for public or private swimming and wading pools, including water slides. This term does not include pools specifically maintained to provide habitat for aquatic life.
- (p) **Water utility use** - water used for withdrawal, treatment, transmission and distribution by potable water systems.

SOURCES OF WATER

(Summary Data Sheet)

Please supply information regarding the source(s) of water for your activities. Include information regarding **all** wells/pumps on the property.

Table 1.
SUMMARY OF GROUND WATER SOURCES

Well or Pump Number	Wellfield or Facility Name	Casing Dia. (in)	Casing Depth (ft)	Total Depth (ft)	Operation Hrs/wk	Pump Capacity (in gpm)	Date Drilled	Existing or proposed (date)	Type of Use*
UVB-1	OU-4	10	48	49	168	55	11/97	EXISTING	D, F
UVB-2	OU-4	10	48	49	168	55	11/97	EXISTING	D, F

* - See use descriptions on page 4. If more than one use type, show predominate use

Table 2
SUMMARY OF SURFACE WATER SOURCES

Pump Number	Pump Capacity (gpm)	Operation Hrs/wk	Acreage of Surface Water Body	Name of Source	Status (date if proposed)	Type of Use

PROPERTY CONTROL AND LOCATION

I. PROPERTY CONTROL

1. Property Ownership - Provide a copy of the excuted deed indicating the current owner of the property which is the subject of this application.
2. Leased Property - Provide a copy of the current lease, or a letter signed by the property owner describing the lease arrangement and the duration of the lease.

II. LOCATION MAPS

Provide a recent map (preferably a USGS topographic quadrangle, a map from a county plat directory, or survey map) indicating the following:

- (a) property boundaries (include approximate lengths of boundaries in feet); (public supply water uses please show service areas)
- (b) All existing and proposed withdrawal point locations. Indicate well number and casing size for ground water withdrawals, and pump number and maximum pump capacity for surface water withdrawals;
- (c) a north arrow;
- (d) a scale designation - all maps should have a minimum scale of 1inch = 2,000 feet; and
- (e) labeled landmarks such as roads and political boundaries.

Please provide identification numbers and date permitted if you obtained or are in the process of obtaining any of the following permits for this project

Environmental Resource Permit (ERP)	NA
EPA Ordered Environmental Impact Statements	NA
Agricultural Discharge	NA
FDEP Wastewater Site Identification No.	NA
FDEP Public Water Supply (PWS) Identification No.	NA

III. ADJACENT PROPERTY OWNERS

(not applicable to Secondary Users Permits)

Provide a complete list of adjacent property owners and mailing address as prescribed in Tables #3 and 4. Attach additional sheets as needed.

Name	Address	City	State	Zip Code
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NONE REQUIRED, less than 100,000 gallons per day annual average of EXTRACTED GROUNDWATER

USE OF LOWEST ACCEPTABLE QUALITY WATER SOURCE

1. Are you proposing to use the most appropriate (lowest quality) source of water?

NA

2. Is reclaimed water readily available as a source of water?

NA

WATER CONSERVATION PLAN

A water conservation plan must be submitted with this application. Please refer to Section 12.0 and Appendix I, Applicant's Handbook, Consumptive Uses of Water, for information on how to prepare a plan and the plan components.

NA

Table 3 - Ground Water Withdrawals

Withdrawal Amount	Property Owners to be Listed
less than 1,000,000 gallons maximum per day - and- less than 100,000 gallons per day annual average	None required
max day is between 1 and 5 million gallons -or- average day is between 100,000 and 500,000 gallons	All property owners within 600 feet of well or 100 feet of property boundary.
max day is between 5 and 10 million gallons -or- average day between 500,000 and 1,000,000 gallons	All property owners within 1,320 feet of each well or 200 feet of the property boundary.
max day exceeding 10 million gallons -or- average day exceeds 1,000,000 gallons	All property owners within 2,640 feet of the well, or 400 feet of the property boundary.

Table 4 - Surface Water Withdrawals

Withdrawal Amount	Property Owners to be Listed
surface area of the withdrawal lake is less than 80 acres	All riparian land owners on lake and those up to 600 feet downstream if the lake has an outlet
surface area of the withdrawal lake is greater than 80 acres	All riparian land owners up to 600 feet from the withdrawal point
Withdrawals from a stream and average daily pumpage is less than 5 million gallons	All riparian land owners up to 600 feet upstream and 1,320 feet downstream from the withdrawal point
Withdrawals from a stream and average daily pumpage is greater than 5 million gallons	All riparian land owners up to 1,320 feet upstream and 2,640 downstream from the withdrawal point

SECTION III

Applicant Checklist

Please verify that the following information has been provided as part of this application package:

		<u>Attached</u>
1.	Appropriate Fee	\$ <u>200.00</u>
2.	Signature of Applicant and/or Agent	<u>✓</u>
3.	Authorization from Owner for Agent (if Agent is listed on application)	<u>✓</u>
4.	Copy of Executed Deed or Lease Agreement	<u>✓</u>
5.	Location Map	<u>✓</u>
6.	List of adjacent land owners	<u>NA</u>
7.	Completed Water Use Type Package*	<u>✓</u>
8.	Water Conservation Plan	<u>NA</u>

*NOTE: Applications for Public Supply, Commercial/Industrial, Agricultural, Aquacultural, Nursery/Fem, Golf Course Irrigation, Dewatering, and Landscape Irrigation water uses must also include the supplemental water use package specific to each use type. Those applying for a **Secondary Use Permit** must complete and submit each of the supplemental water use packages that applies to their type use.



PUBLIC SUPPLY AND/OR ESSENTIAL TYPE USES

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

I. YEAR-ROUND PUBLIC SUPPLY

A. POTABLE WATER SUPPLY

1. Please submit a map (minimum 1:2000 scale or larger) showing the current and proposed service area.
2. Please submit any of the following that apply:
 - a) Copy of the Public Service Commission (PSC) certification describing service area;
 - b) Copy of local government franchise agreement; or
 - c) Documentation that utility is not regulated by PSC or local government.
3. Complete Table 1 - Historic Water Use, and Table 2 - Projected Water Use as a basis for the requested allocations. In addition:
 - (a) Provide the past 12 months of monitored water use data (MOR's if available) and calculate historic average daily and maximum daily per capita use;
 - (b) Explain the method of projecting population growth (historic projection preferred): _____

Attach documentation for method of determining growth projections.

B. WASTEWATER DISPOSAL

1. Specify the present and projected amounts of wastewater:

	PRESENT (mgd)*	PROJECTED (5 YEARS)	PROJECTED (10 YEARS)	PROJECTED (15 years)
Average daily disposal *				
Plant capacity				

*mgd = million gallons per day
 v Identify WWTP if more than one

2. Specify the percentage for each type of disposal (total 100%)

DISPOSAL TYPE	PRESENT %	PROJECTED % (5 YEARS)	PROJECTED % (10 YEARS)	PROJECTED % (15 YEARS)
Reuse				
Offsite Discharge				
Individual Septic Tanks				
On-site Percolation Ponds				
On-site Spray Fields				
Other				

C. REUSE OF RECLAIMED WATER

1. Describe the method of reuse by completing the table below:

Check here if no reuse projected at this time

TYPE OF SITE (golf, landscape, etc)	FACILITY NAME	ACREAGE	AVERAGE USE (mgd)	PROJECTED AVE. USE (mgd)

2. Please provide a map (minimum 1:2000 scale) showing the location of the sites listed in the table above as well as the location of all major existing reuse lines and those proposed for the next 15 years.

3. If wastewater is treated on-site specify level of treatment:

primary secondary secondary with disinfection

D. ESSENTIAL USE

Are you requesting the use of any of the identified sources for fire protection? YES NO

If yes, please list the wells/pumps that will be used.

TABLE 1
HISTORIC WATER USE

Last 7 years	Past Population	Number of Units	Per Capita Usage (gpcd)	Household Avg. day (mgal)	Household Max. Day (mgal)	Commercial/Industrial Avg. day (mgal)	Commercial/Industrial Max. day (mgal)	Irrigation (urban landscape or common areas (mgal)(ave. day)	Irrigation (urban landscape or common areas (mgal) (max. day)	Water Utility (mgal)	Unaccounted for water (mgals)	Total Annual Avg. day (mgal)	Total Annual Max day (mgal)
19													
19													
19													
19													
19													
19													
19													
19													

Table Definitions

- Household Use: Amount sold or given to domestic customers. Typically includes 5/8 and 3/4 inch metered accounts. Includes private lawn irrigation.
- Population: Estimated number of residents served.
- # of Units: Number of residential units served.
- Per Capita Use: Use per person per household; Average household use (column 5) divided by population (column 2)
- Commercial/Industrial Use: Amount sold to commercial customers. Typically includes meters larger than 1 inch. Include bulk customers in this use.
- Irrigation Use: Amount used for common area irrigation owned or maintained by a public entity. This does not include areas privately owned areas or amounts previously accounted for under household use.
- Water Utility: Misc. monitored use (eg. fire protection, sewer flushing, construction use, & maint. features)
- Unaccounted Water: Unaccounted for water use. Obtained from an audit of system.
- Total Use: Sum of all uses - household + comm/ind. + irrigation + water util. = MOR's for year

II. SEASONAL PUBLIC SUPPLY

(Mobile Home Parks, RV Parks, Campgrounds, etc.)

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

1. Number of acres owned: _____
2. Total number of lots/spaces: _____
3. Average number of residents over the past 12 months: _____
4. What is the maximum number of residents served?: _____
5. What is the minimum number of residents served?: _____
6. Does each lot/space have an individual water meter?: _____
7. Does this facility have any of the following water uses: (yes or no)

_____ a) Laundry	_____ d) Bath house/restrooms
_____ b) Club house with restrooms	_____ e) Swimming pool
_____ c) Common areas with irrigation	_____ f) Other uses, please specify _____
# of Acres _____	
8. Attach copies of monthly water use reports for the last 12 months. Using the past months of water use, please calculate:
 - a) Average Daily water use over the past 12 months: _____ mgd*
 - b) Maximum Daily water use over the past 12 months: _____ mgd*
 - c) TOTAL water used over the past 12 months: _____ mg
9. WASTEWATER DISPOSAL - specify the percentage for each, total 100%:

DISPOSAL TYPE	PRESENT %	PROJECTED % (5 YEARS)	PROJECTED % (10 YEARS)	PROJECTED % (15 YEARS)
Reuse				
Offsite Discharge				
Individual Septic Tanks				
On-site Percolation Ponds				
On-site Spray Fields				
Other				

10. If wastewater is treated on-site, specify level of treatment:

primary secondary secondary with disinfection

11. Discription of lots.

- a) Average lot size: _____ sq. ft.
- b) Average home size: _____ sq. ft.
- c) Square footage of drive and walkways: _____ sq. ft.

12. WASTEWATER DISPOSAL

a) Specify the present and projected amounts of wastewater:

	PRESENT (mgd)*	PROJECTE D (5 YEARS)	PROJECTED (10 YEARS)	PROJECTED (15 years)
Average daily disposal				
Plant capacity				

*mgd = million gallons per day



COMMERCIAL/INDUSTRIAL TYPE USES

(Submit 2 copies of application, supplemental information drawings, calculations, etc.)

I. PROJECT DESCRIPTION

1. Type of business and/or operation, please describe:

Groundwater extraction and treatment system

2. Requested Water Use:

	Existing (mgd)	Proposed (mgd)	Proposed (mgd)	Proposed (mgd)
		5 years	10 years	15 years
Average Daily Use				
Maximum Daily Use				
Average Off-Site Discharge				

*mgd - million gallons per day

3. Provide a graph (month vs mgd) or table summarizing monthly water use for the previous 3 years.
4. Provide a flow chart (schematic diagram) depicting the flow of all sources of water, use and eventual discharge.
5. Please provide a table projecting expected growth over the next 15 years. What is the reason for the expected growth?

II. WASTEWATER DISPOSAL

Describe in detail the flow of wastewater from the plant to its ultimate disposal. Also, provide the applicable Florida Department of Environmental Protection, Environmental Protection Agency permit numbers (EPA, FDEP) issued for discharge to surface waters. Attach daily flow amounts for effluent discharged to surface waters for the last 12 months. Include this information in the above requested schematic diagram.

III. REUSE

1. Provide water quality data for effluent discharged from this facility during the last 12 months.
2. Provide the level of water quality required for each individual manufacturing and cooling process. Provide supporting documentation as to water quality and quantity limitation of reuse for each component of the process.



AGRICULTURAL OR AQUACULTURAL TYPE USES

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

(Please submit a separate form for each non-contiguous parcel)

Field/Block/Parcel Name: _____

- I. Does an approved NRCS conservation plan exist for the operation included in this application? YES NO

If YES, please include a copy of those sections addressing water use and water conservation.

Date of Plan: _____

Please estimate what percentage of the plan has been implemented: _____

- II. Is this farming operation dewatered to maintain proper soil moisture?
 YES NO

If YES, please provide a record of historic use for this purpose.

- III. Please complete the following sections which apply to your usage:

- A. CITRUS & BLUEBERRIES
- B. VEGETABLE AND OTHER CROPS
- C. PASTURE IRRIGATION
- D. SOD
- E. LIVESTOCK (including Dairy)
- F. AQUACULTURE

A. CITRUS and BLUEBERRY WATER USE

1. Use Type: Citrus Blueberries

2. Complete the following charts:

EXISTING

IRRIGATION METHOD	IRRIGATED ACRES	APPLICATION RATE (in/yr)	WELL NUMBER	PUMP* NUMBER
Drip				
Microjet				
Overhead Sprinkler				
(Other)				

* indicate ground or surface water

PROPOSED

IRRIGATION METHOD	IRRIGATED ACRES	APPLICATION RATE (in/yr)	WELL NUMBER	PUMP* NUMBER
Drip				
Microjet				
Overhead Sprinkler				
(Other)				

* indicate ground or surface water

3. Indicate which of the following months the plants are typically irrigated:

- Year round
- January February March April
- May June July August
- September October November December

4. Please submit annual water use records for your irrigation and freeze protection for the previous 3 years.

5. What is the age and number of plants (trees/bushes):

Number of Trees/Bushes	Age of Plants*	Acreage	Tree Spacing

* Age groups: < 1 yr; 1 to 5 yrs; > 5 years

6. Freeze Protection:

Please list your freeze protection sources and the acreage protected:

		<u>Year</u>
Pump/well _____	Acres _____	_____
Pump/well _____	Acres _____	_____
Pump/well _____	Acres _____	_____
Pump/well _____	Acres _____	_____

7. If any irrigation water is available from on-site reservoirs, please estimate the average volume of water available: _____ (units)

B. VEGETABLES AND OTHER CROPS WATER USE

1. Complete the following charts:

EXISTING

Crop Type	Planting Date (mo/day)	Harvest Date (mo/day)	Irrigation Method	Average System Pressure	Acres Irrigated	Amount Used (inch/season)	Amount Used (mgal/yr)*	Well or Pump Number

PROPOSED

Crop Type	Planting Date (mo/day)	Harvest Date (mo/day)	Irrigation Method	Average System Pressure	Acres Irrigated	Amount Used (inch/season)	Amount Used (mgal/yr)*	Well or Pump Number

*mgal/yr = million gallons per year

2. **Crop Rotation:** If crops are rotated, briefly describe how the various crops are rotated from season to season and year to year (e.g. tomatoes are grown in the spring of every year on 100 acres, cucumber in the fall on 70 acres, and watermelons are grown every other year on 10 acres):

3. Surface Runoff: (flood and seepage irrigation only)

Generally describe any surface runoff of irrigation water including amounts, receiving water body and conditions when runoff occurs:

4. Applicants requesting water for crop washing must fill out the _____ Commercial/Industrial Type Uses form.

C. PASTURE IRRIGATION

1. How many acres of pasture are or will be irrigated: present _____ proposed _____
2. Please estimate the number of times that the pasture was irrigated during the past 12 months:

3. Do flowing wells supply irrigation to your pastures? YES NO
4. Do you harvest pasture grasses? YES NO
5. Water Use Amount Information:

	Existing (mgd)	Proposed (mgd)	Proposed (mgd)	Proposed (mgd)
		5 years	10 years	15 years
Average Daily Use				
Maximum Daily Use				

*mgd - million gallons per day

6. Please submit annual water use records for your irrigation for the previous 3 years.

D. SOD WATER USE

1. How many acres of sod are farmed?
Existing _____ Proposed _____ acres

2. At what depth below land surface do you maintain the water table: _____ feet below land surface.
3. Please submit annual water use records for your irrigation for the previous 3 years.
4. Water Use Amount Information:

	Existing (mgd)	Proposed (mgd)	Proposed (mgd)	Proposed (mgd)
		5 years	10 years	15 years
Average Daily Use				
Maximum Daily Use				

*mgd - million gallons per day

E. LIVESTOCK WATER USE (including dairy)

Type of Livestock	Average # of Stock/Year		GPD/animal
	Existing	Proposed	

LIVESTOCK WATER NEEDS

Animal	Use Per Animal (gpd)
Beef Cattle	12
Dairy Cattle	150
Horses	12
Chickens	.10

gpd = gallons per day

1. Do you utilize additional water for livestock cooling? YES NO

2. If YES to Question 1, please describe your cooling methods and how much is used:

3. Dairy, Hogs, and Poultry Use (processing) - please complete the following chart:

AVERAGE GALLONS USED PER DAY

	Existing (gals)	Proposed (gals)
Livestock cleaning		
Equipment washing		
Product cooling		

4. Describe the methods used in procooling. _____

5. Requested Water Use:

	Existing (mgd)	Proposed (mgd)	Proposed (mgd)	Proposed (mgd)
		5 years	10 years	15 years
Average Daily Use				
Maximum Daily Use				

*mgd - million gallons per day

7. Please submit annual water use records for your use for the previous 3 years.

F. AQUACULTURAL WATER USE

1. Type of Aquaculture: fish or eels other
 shellfish
 plants
 alligators

2. Attach map showing location of all on-site facilities, elevations of all overflow structures, all pumps and wells, volume of each containment structure, which ponds are lined and unlined and routing of water use.

3. Requested Water Use:

	Existing (mgd)	Proposed (mgd)	Proposed (mgd)	Proposed (mgd)
		5 years	10 years	15 years
Average Daily Use				
Maximum Daily Use				
Average Off-Site Discharge				

*mgd - million gallons per day

4. Where does overflow water discharge to: _____
5. On average, how many times per year are the ponds emptied: _____
6. What is the criteria for emptying a pond?: _____
7. Is pond aerated?: _____
8. Please complete the following table:

SUMMARY OF AGRICULTURAL USES
AVERAGE DAILY USES

Type Use	Existing Use (mgd)	Proposed Use	Proposed Use	Proposed Use
		5 years	10 years	15 years
A. Citrus & Blueberries				
B. Vegetables				
C. Pasture Irrigation				
D. Sod Irrigation				
E. Livestock				
F. Aquaculture				
Total				



NURSERY / FERN TYPE USES

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

I. FERN USE

1. Complete the following table:

Requested Use (by source)	Existing (mgy)	Proposed (mgy)	Proposed (mgy)	Proposed (mgy)
		5 years	10 years	15 years
Ground Water				
Surface Water				
Other: _____				

*mgy - million gallons per year

2. Provide total project acreage for each of the next 15 years.

Year	Acres

Year	Acres

Year	Acres

3. Include a map of the project area, delineating any shade structure, hammocks, ponds, lakes, well and pump locations. Include depth and acreage of each impoundment.

4. **WATER FOR FREEZE PROTECTION (PROPOSED ACREAGE)**

The District will presume that the criteria established in Subsection 40C-2.301(2), F. A. C., will be met if you agree to construct either a tailwater recovery pond capable of retaining the volume necessary to freeze protect the proposed acreage during the first 48 hours of freezing temperature, or construct a well which withdraws water from the shallow aquifer, or a District approved alternative which does not utilize the Floridan aquifer as the source for freeze protection.

a) If proposed tailwater pond is wholly owned:

Provide construction drawings, including depth to water table (from soil borings), and calculations to determine the volume of water capable of being stored in the pond.

b) If proposed withdrawals are from a lake or non-wholly owned pond:

Contact a District environmental specialist to determine the environmental data needed to support this application.

c) If proposed withdrawals are from shallow aquifer:

Provide hydrologic data to support groundwater for new freeze protection.

d) Please complete Table 4(d) - (attached)

II. OTHER NURSERY USE (other than fern use)

1.

Requested Use (by source)	Existing (mgy)	Proposed (mgy)	Proposed (mgy)	Proposed (mgy)
		5 years	10 years	15 years
Ground Water				
Surface Water				
Other: _____				

*mgy - million gallons per year

2. Provide total project acreage for each of the next 15 years.

Year	Acres

Year	Acres

Year	Acres

3. Please Complete
Nursery Worksheet:

Vegetation Type (foliage, woody ornamentals, trees)*	Number Acres	Number of Containers if applicable	Container Spacing **	Irrigation method (drip, overhead, etc.)	Type of Cover (shade, hammock, saran, greenhouse, uncovered)	Freeze protection? Yes or No If yes, list method	Mgals/y Ground water	Mgals/y Surface Water

4. Provide methodology (IFAS, meters, etc.) used to calculate requested ground and surface water amounts.
5. Include a map of the project area, delineating the layout of all beds, ponds, lakes, and well and pump locations. Include depth and acreage of each impoundment

* Type vegetation (trees, shrubs, indoor foliage, woody ornamentals)
 ** Container Spacing (number of containers per acre)

4(d). Complete the following table.

FERNERY WORKSHEET

EXISTING AND PROPOSED ACREAGE

Type of Fern or Vegetation	Total Acres	# Acres of		Sprinkler Head Spacing	Nozzle Size (gals/min)	Irrigation Source	Irrigation Pressure	Freeze Protection Source	Acres Freeze Protected	Existing (E) or Proposed (P)
		Hammock	Shade							



GOLF COURSE IRRIGATION TYPE USE

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

I. BREAKDOWN OF ACREAGE:

	Existing (acres)	Proposed (acres)
Tees/greens		
Fairways		
Roughs		
Landscape areas		
TOTAL # ACRES IRRIGATED		

II. RECLAIMED WASTEWATER USAGE:

1. Average amount of reclaimed wastewater currently being used for irrigation _____ million gallons per day (mgd)
2. Name of treatment plant supplying golf course: _____
3. Complete the following table:

Annual Water Use Summary

	Present (mgals/yr)	Proposed (mgals/yr)
Ground water		
Surface water (natural)		
Surface water (manmade)		
Reclaimed water		
TOTAL		

III. NEW GOLF COURSE:

For new golf course areas, provide the following information regarding the grow-in period:

1. Number of months _____
2. Date irrigation to commence _____
3. Amount requested for grow-in _____ mgd

IV. ADDITIONAL INFORMATION:

1. Map delineating locations of all lakes, ponds, weirs, control structures (include elevations for each), well(s), surface water pumps and location of meters. Include acreage and depth (National Geodetic Vertical Data) of each lake or impoundment.
2. Detailed description for existing irrigation system including a description of the timer system. Provide proposed layout if not yet built.
3. Methodology (IFAS, meters etc.) used to calculate requested ground and surface water amounts. Please provide a detailed description of any methodology used if other than IFAS.
4. List of all pesticides and herbicides used within the last 5 years if there is an off-site discharge location. Provide a copy of any pesticide management plan you may have for the course.
5. List of all wastewater treatment plants within a 5 mile radius of project. Provide the name and address of a contact person design capacity, current wastewater flows, and level of treatment.



DEWATERING TYPE USES

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

1. Attach a description of the activity with the following information:

- a. General project description and proposed duration of dewatering.
- b. A description of dewatering methods proposed, including locations of withdrawal points and depth of dewatering.
- c. Specify aquifer being dewatered.
- d. A description of disposal of water and methods of controlling water quality of discharges.
- e. Attach site map with scale no greater than 1 inch = 2000 feet, showing the following:
 - 1) location of all wellpoints, underdrains or shallow vacuum wells;
 - 2) location of all turbidity barriers,
 - 3) route of discharged waters; and,
 - 4) location of all wetlands within 1/4 mile of property boundary
- f. Map showing the extent of the projected drawdown due to dewatering.
- g. If this is a mining activity provide the following:
 - 1) Site plans showing annual progression of the mining
 - 2) Geologic cross sections of the mining area to depth exceeding maximum mine depth
 - 3) location of any wells on the property
- h. Description of processing facilities on site. A commercial/industrial type use package must also be completed if there are processing facilities on site.

2. WATER QUANTITY INFORMATION:

	Existing (mgd)	Proposed (mgd)	Proposed (mgd)	Proposed (mgd)
		5 years	10 years	15 years
Average Daily Use	0.08208	0.08208	0.08208	0.08208
Maximum Daily Use	0.08208	0.08208	0.08208	0.08208
Average Off-Site Discharge	0.08208	0.08208	0.08208	0.08208

*mgd - million gallons per day

Two wells at combined max pumping rate of 57/GPM = 0.08208 mgd
 Extracted water will be treated and discharged to City of Orlando Sewer system under Industrial user permit for the site



LANDSCAPE IRRIGATION USE

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

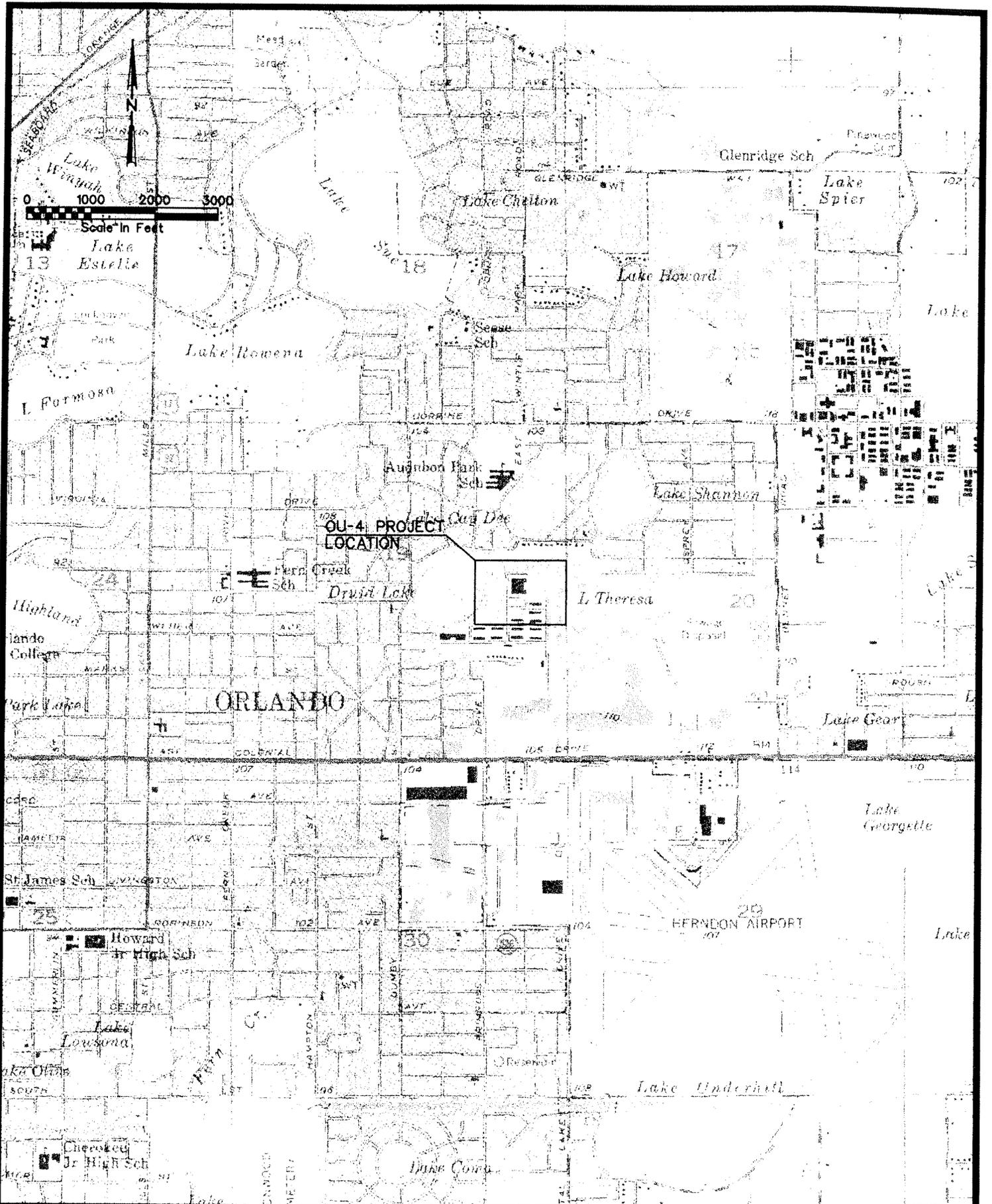
1. Complete this chart if water is requested for irrigation of lawns, common areas, aesthetic or recreational areas.

TYPE OF VEGETATION	NO. OF ACRES	IRRIGATION METHOD	AMOUNT REQUESTED (Mgals/Year)*	SOURCE NAME (lake, or well ID)

2. Attach 2 copies of the following:

- ___ a. Map (including scale) showing outline of irrigated areas according to vegetation type.
- ___ b. List of all surface water bodies on or adjacent to the property boundary. Include lakes, ponds, rivers, canals etc.
- ___ c. List of all wastewater treatment plants within a 5 mile radius of project. Provide the name and address of a contact person design capacity, current wastewater flows, and level of treatment.

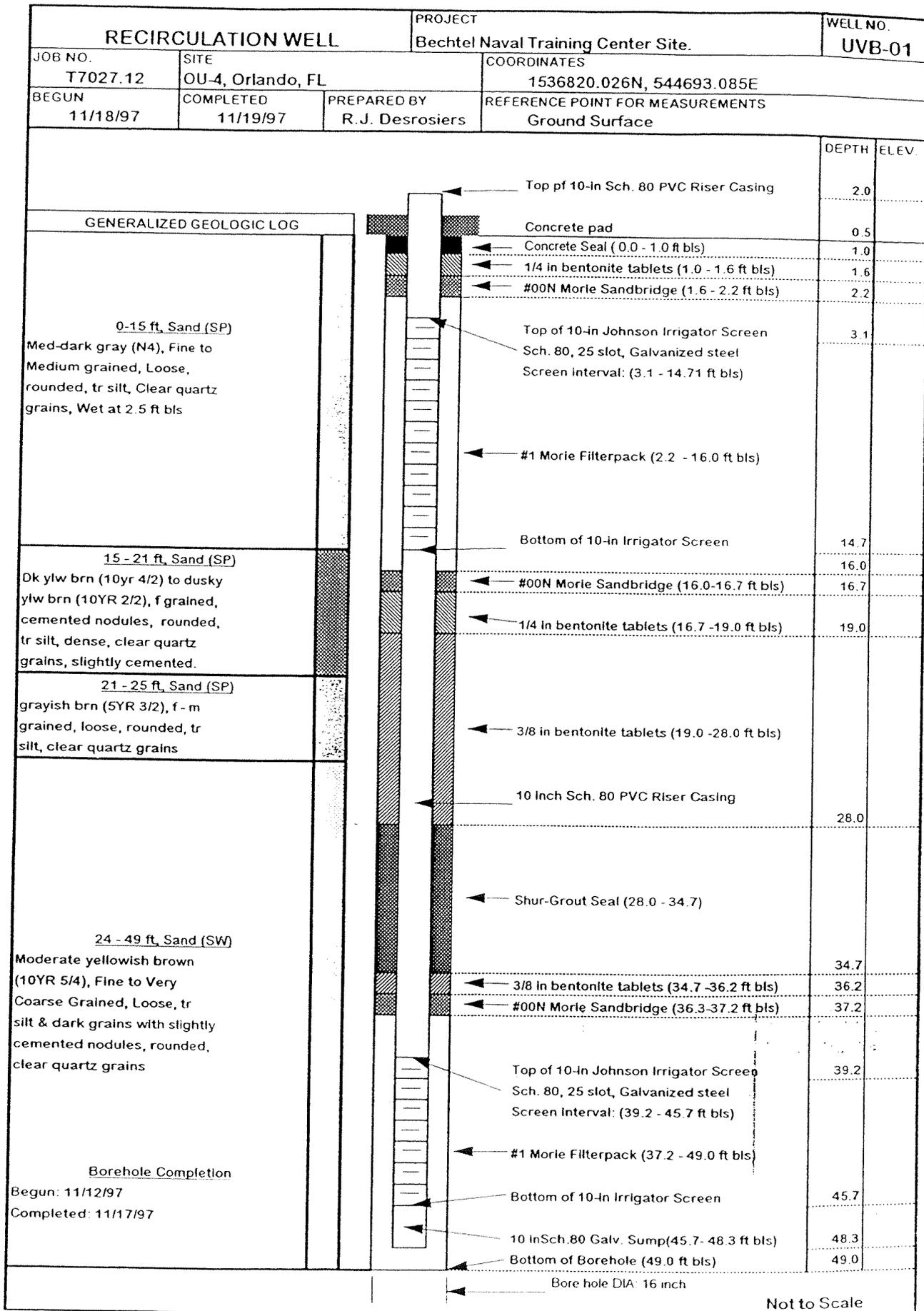
ATTACHMENT A



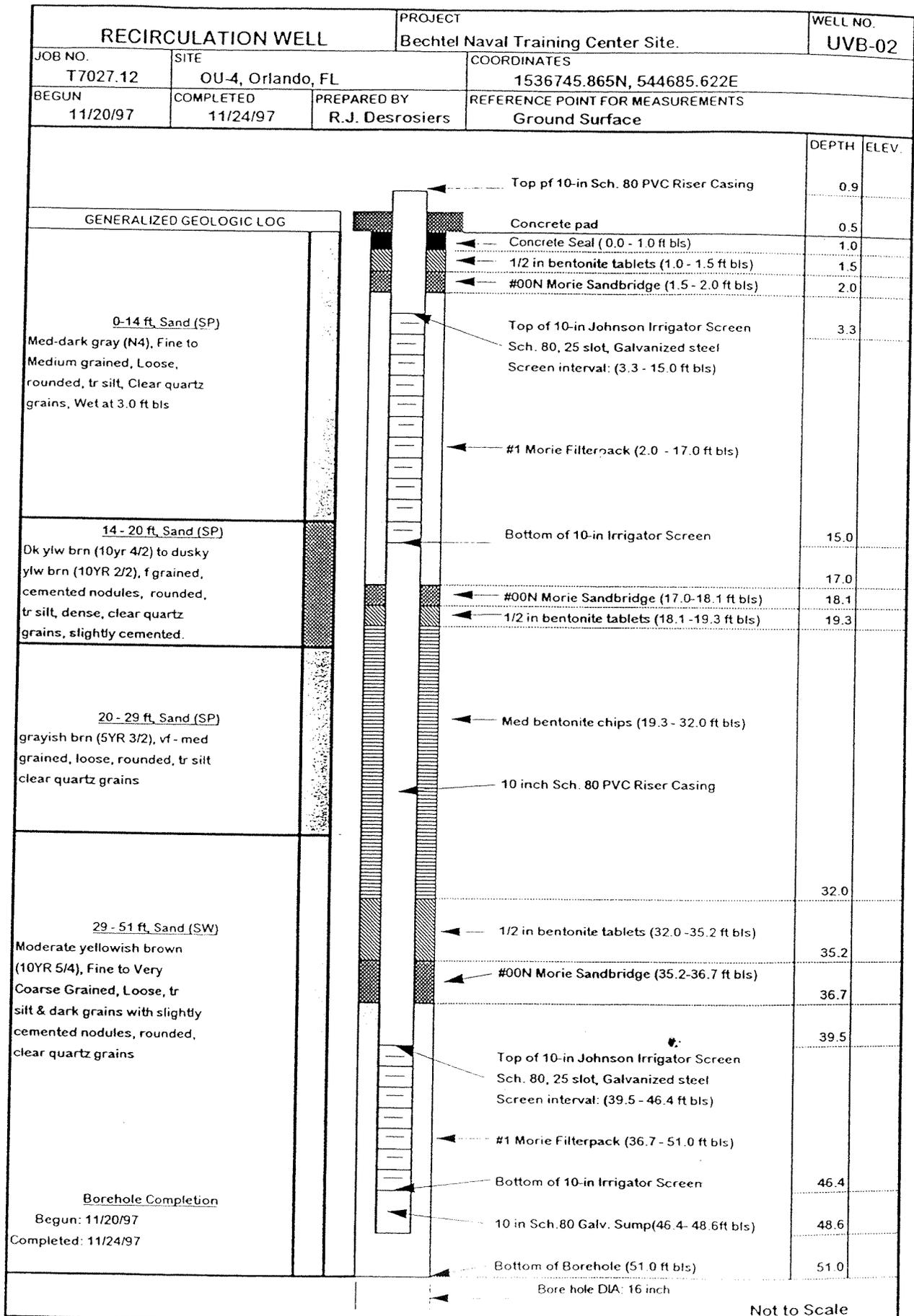
LOCATION MAP

OPERABLE UNIT 4, STUDY AREA 13
 NAVAL TRAINING CENTER, ORLANDO FL

ATTACHMENT B



Not to Scale



Not to Scale