N65928.AR.003015
NTC ORLANDO
5090.3a

WORK PLAN MODIFICATION GRINDER LANDFILL WITH TRANSMITTAL NTC ORLANDO FL
3/6/2003
NODARSE AND ASSOCIATES, INC.

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NODARSE & ASSOCIATES, INC.

Geotechnical, Environmental Consulting & Materials Engineering

BUREAU OF WASTE CLEANUP

MAR 1 0 2003

TECHNICAL REVIEW SECTION

Work Plan Modification
Grinder Landfill Located at the Former
Orlando Naval Training Center
Orlando, Orange County, Florida

BUILD ON OUR EXPERIENCE

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Geotechnical, Environmental Consulting & Materials Engineering

March 6, 2003
Project No. W02-E-005

BUREAU OF WASTE CLEANUP

MAR 10 2003

TECHNICAL REVIEW SECTION

Mr. David P. Grabka, P.G.
Florida Department of Environmental Protection
Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Work Plan Modification
Grinder Landfill Located at the Former Orlando Naval Training Center
Orlando, Orange County, Florida

Dear Mr. Grabka:

In August 2002, **Nodarse & Associates, Inc. (N&A)** submitted a Work Plan for environmental monitoring of construction activities for the new Baldwin Community Park located at the former Orlando Naval Training Center. The Work Plan was prepared to meet the deed restrictions and requirements for Parcel No. 4, which includes the former Grinder Landfill, which is the site of the new Baldwin Community Park. Subsequent to submittal, the Florida Department of Environmental Protection (FDEP) approved the Work Plan in a letter dated October 7, 2002.

In the preparation of the original Work Plan, it was assumed that no dewatering activities would be required for the construction of underground utilities within the "groundwater restriction zone" located around Parcel No. 4. Recently, however, it was discovered that a portion of the stormwater underground transmission system located on the southern boundary of the groundwater restriction zone will require some dewatering during installation. Perched water table conditions were discovered within this area during site grading and preliminary construction activities. Therefore, the purpose of this modification is to document the procedures that will be implemented for environmental monitoring of dewatering activities necessary for construction within the groundwater restriction zone.

PRE-DEWATERING ACTIVITIES

Attachment A documents the portion of the stormwater transmission system which will require dewatering during construction. For the purposes of orientation, this section of pipe is located in the far southern end of the park on the southern fringes of the groundwater restriction zone. The pipeline area is generally located within the groundwater restriction zone, but is not located within the area designated as the Grinder Landfill parcel.

Four (4) temporary monitoring wells, designated TW-1 through TW-4, were installed to ascertain pre-dewatering groundwater quality conditions for the perched water table area slated for dewatering. This information provides us with baseline water quality data, to determine if contaminants of concern are detected within groundwater in the area slated for dewatering. The as-builts for the four (4) monitoring wells may be found in **Attachment B**.

Upon completion of monitoring well installation, each well was sampled and analyzed for the parameters listed under EPA Methods 608/8081, 8310, 8021, and Beryllium, Magnesium, Thallium and Vanadium. These are consistent with monitoring parameters required under the Record of Decision which governs this groundwater restriction zone and landfill area. A copy of the laboratory report for the four (4) samples collected may be found in **Attachment C**. As can be seen from the information provided in **Attachment C**, none of the parameters analyzed were detected above the laboratory instrument detection levels or applicable maximum contaminant levels.

PLANNED DEWATERING PROGRAM

In order to adequately dewater the area necessary for construction, well points will be installed to a depth of approximately 9 feet below land surface. This will assure that only the perched water table in the area will be dewatered The lower water table, estimated to be approximately 12 feet below land surface, will remain unaffected by dewatering activities. It is this lower surficial aquifer that is currently monitored as part of the monitoring program for the Grinder Landfill facility.

Initially, approximately 1,000 gallons per minute will be generated during dewatering activities. The duration of this flow is expected to be minimal. Thereafter, an average flow rate of approximately 250 gallons per minute is anticipated. Disposal of the recovered groundwater will be on-site within the recently completed dry stormwater retention ponds located in the northwest corner of the property. A portion of the existing stormwater transmission pipeline will be utilized to move water from the dewatering area to the dry stormwater retention ponds located in the northwest corner of the property. It should be noted that by doing this, all water generated by the dewatering system will remain within the Parcel No. 4 groundwater restriction zone area.

WATER QUALITY MONITORING

As previously discussed, a series of temporary groundwater quality monitoring wells were installed and sampled to establish baseline groundwater quality conditions. Upon startup, the effluent of the dewatering system will be sampled and analyzed periodically for the same parameters utilized in the baseline groundwater quality sampling activities. In addition, the four (4) temporary groundwater monitoring wells will be sampled to evaluate groundwater quality moving toward the dewatering system. If a spike of any contaminant is encountered, dewatering activities will be suspended until an alternative disposal plan, addressing the contaminants encountered, is developed. It is anticipated that the dewatering activities will take approximately ten (10) days.

The FDEP will be notified in the event that any contaminant is encountered that exceeds applicable state standards. Any response to the contaminants that may be encountered will be developed in coordination and consultation with the FDEP. In addition, the U.S. Navy will also be notified of any contaminants that may have been encountered.

CLOSURE

If you should have any questions regarding this addendum to the approved Work Plan for the construction activities at Baldwin Community Park, please do not hesitate to contact us.

Sincerely,

NODARSE & ASSOCIATES, INC.

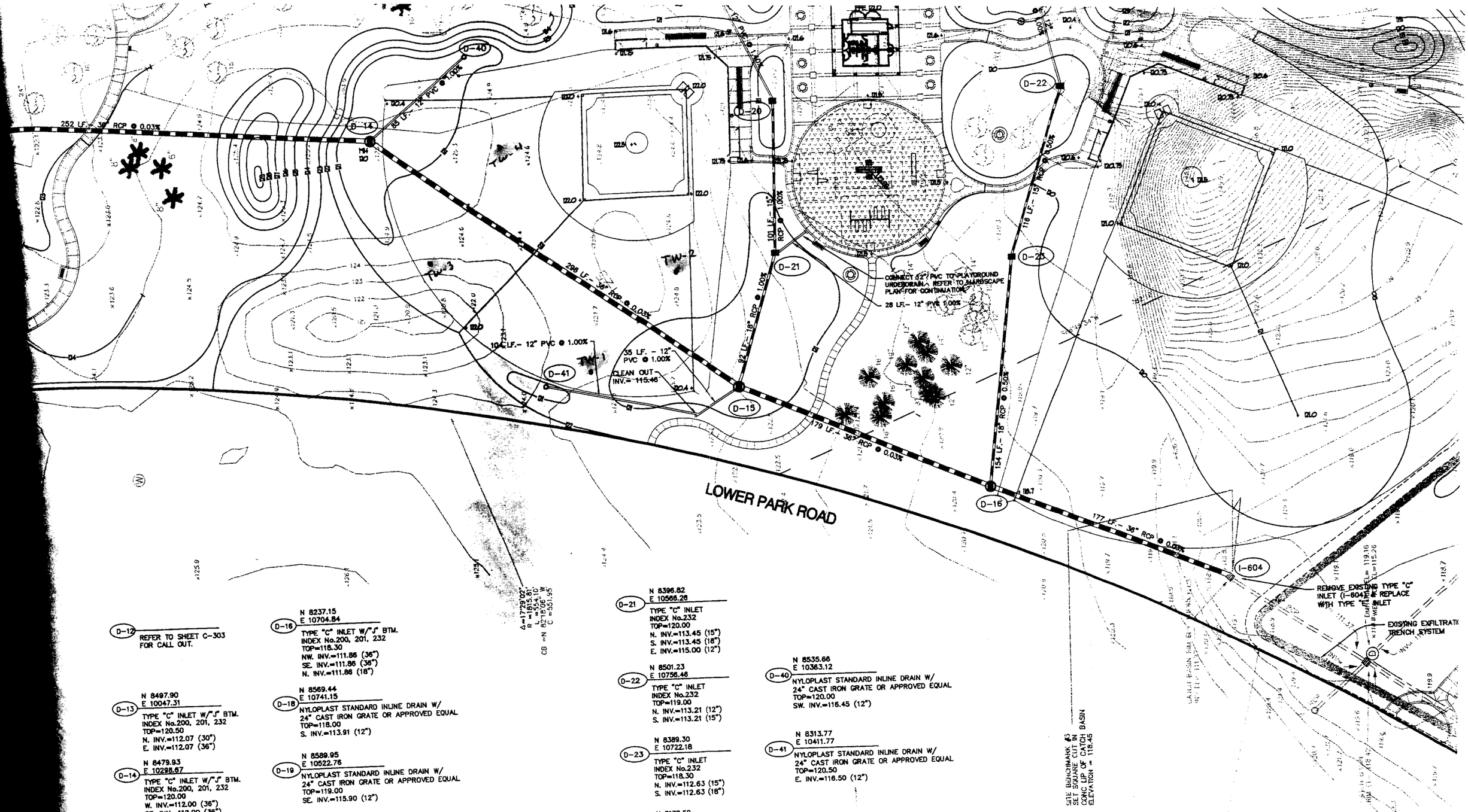
Stacey White for
David B. Twedell
Vice President/Principal Scientist

Maureen F Nichols
Maureen Farrell-Nichols, P.E. 3-6-03
Senior Remediation Engineer
Florida Registration No. 58124

DBT C:\WINDOWS\Temporary Internet Files\OLKD2B4\workplandewatering.wpd

cc: Bob Frazier, City of Orlando

ATTACHMENT A



D-12
REFER TO SHEET C-303 FOR CALL OUT.

D-13
N 8497.90
E 10047.31
TYPE "C" INLET W/"J" BTM.
INDEX No.200, 201, 232
TOP=120.50
N. INV.=112.07 (30")
E. INV.=112.07 (36")

D-14
N 8479.93
E 10295.67
TYPE "C" INLET W/"J" BTM.
INDEX No.200, 201, 232
TOP=120.00
W. INV.=112.00 (36")
SE. INV.=112.00 (36")
NE. INV.= 115.60 (12")

D-15
N 8308.88
E 10540.51
TYPE "C" INLET W/"J" BTM.
INDEX No.200, 201, 232
TOP=120.00
NW. INV.=111.91 (36")
SE. INV.=111.91 (36")
N. INV.=112.53 (18")
SW. INV.=115.11 (12")

D-16
N 8237.15
E 10704.84
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INDEX No.200, 201, 232
TOP=118.30
NW. INV.=111.86 (36")
SE. INV.=111.86 (36")
N. INV.=111.86 (18")

D-18
N 8569.44
E 10741.15
NYLOPLAST STANDARD INLINE DRAIN W/ 24" CAST IRON GRATE OR APPROVED EQUAL
TOP=118.00
S. INV.=113.91 (12")

D-19
N 8589.95
E 10522.76
NYLOPLAST STANDARD INLINE DRAIN W/ 24" CAST IRON GRATE OR APPROVED EQUAL
TOP=119.00
SE. INV.=115.90 (12")

D-20
N 8497.66
E 10566.80
TYPE "C" INLET
INDEX No.232
TOP=120.00
NW. INV.=114.46 (12")
S. INV.=114.46 (15")

D-21
N 8396.82
E 10566.26
TYPE "C" INLET
INDEX No.232
TOP=120.00
N. INV.=113.45 (15")
S. INV.=113.45 (18")
E. INV.=115.00 (12")

D-22
N 8501.23
E 10756.46
TYPE "C" INLET
INDEX No.232
TOP=119.00
N. INV.=113.21 (12")
S. INV.=113.21 (15")

D-23
N 8389.30
E 10722.18
TYPE "C" INLET
INDEX No.232
TOP=118.30
N. INV.=112.63 (15")
S. INV.=112.63 (18")

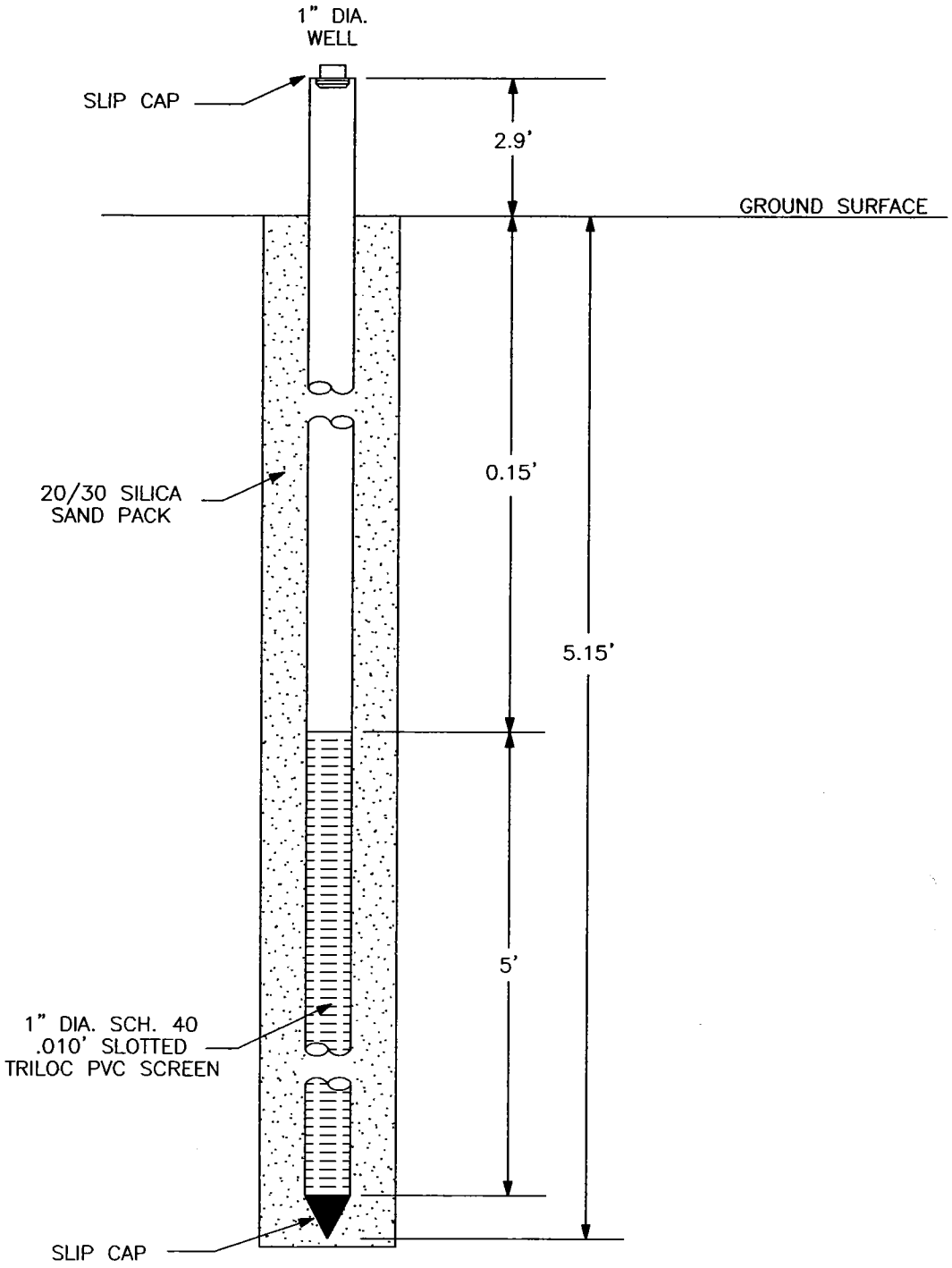
I-604
N 8172.50
E 10868.96
NEW TYPE "E" INLET W/ "J" BOTTOM
INDEX No. 200, 201, 232
TOP=118.25
NW INV.=111.80 (36")
SW INV.=111.80 (24") EXISTING

D-40
N 8535.66
E 10363.12
NYLOPLAST STANDARD INLINE DRAIN W/ 24" CAST IRON GRATE OR APPROVED EQUAL
TOP=120.00
SW. INV.=116.45 (12")

D-41
N 8313.77
E 10411.77
NYLOPLAST STANDARD INLINE DRAIN W/ 24" CAST IRON GRATE OR APPROVED EQUAL
TOP=120.50
E. INV.=116.50 (12")

1"=60

ATTACHMENT B



WELL No. TMW-1

INSTALLATION REPORT

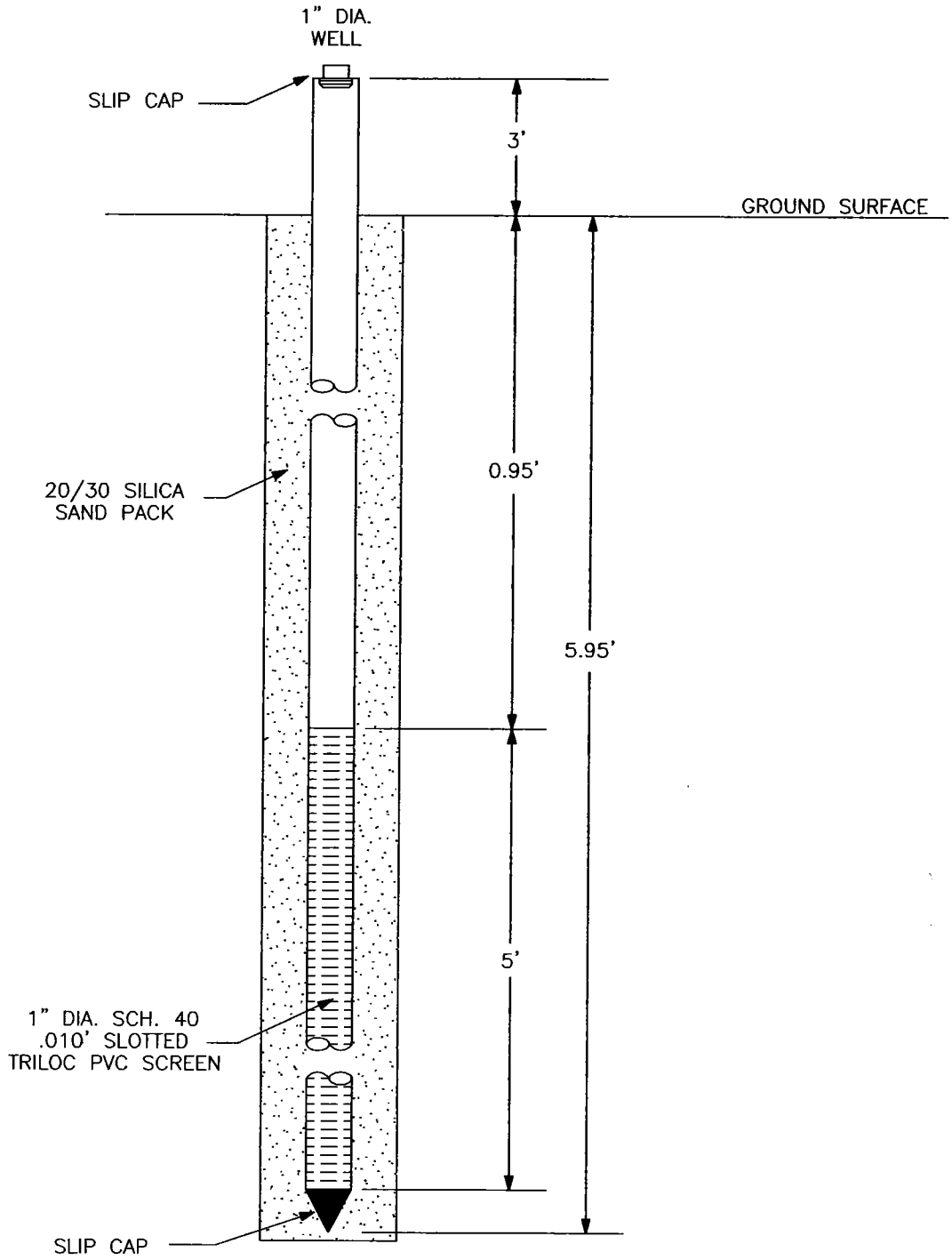
INSTALLATION DATE:	2-21-03
INSTALLED BY:	NODARSE & ASSOCIATES, INC.
DEPTH TO GROUNDWATER:	2.7 FEET
INSTALLATION METHOD:	HAND AUGER

WELL CONSTRUCTION DETAIL

CITY OF ORLANDO PARK

ORANGE COUNTY, FLORIDA

DRAWN: SW	NODARSE & ASSOCIATES, INC.	
CHKD: DBT		
SCALE: N.T.S.		
DATE: 2-25-03	PROJ. NO: W02-E-186	DETAIL: 1



WELL No. TMW-2

INSTALLATION REPORT

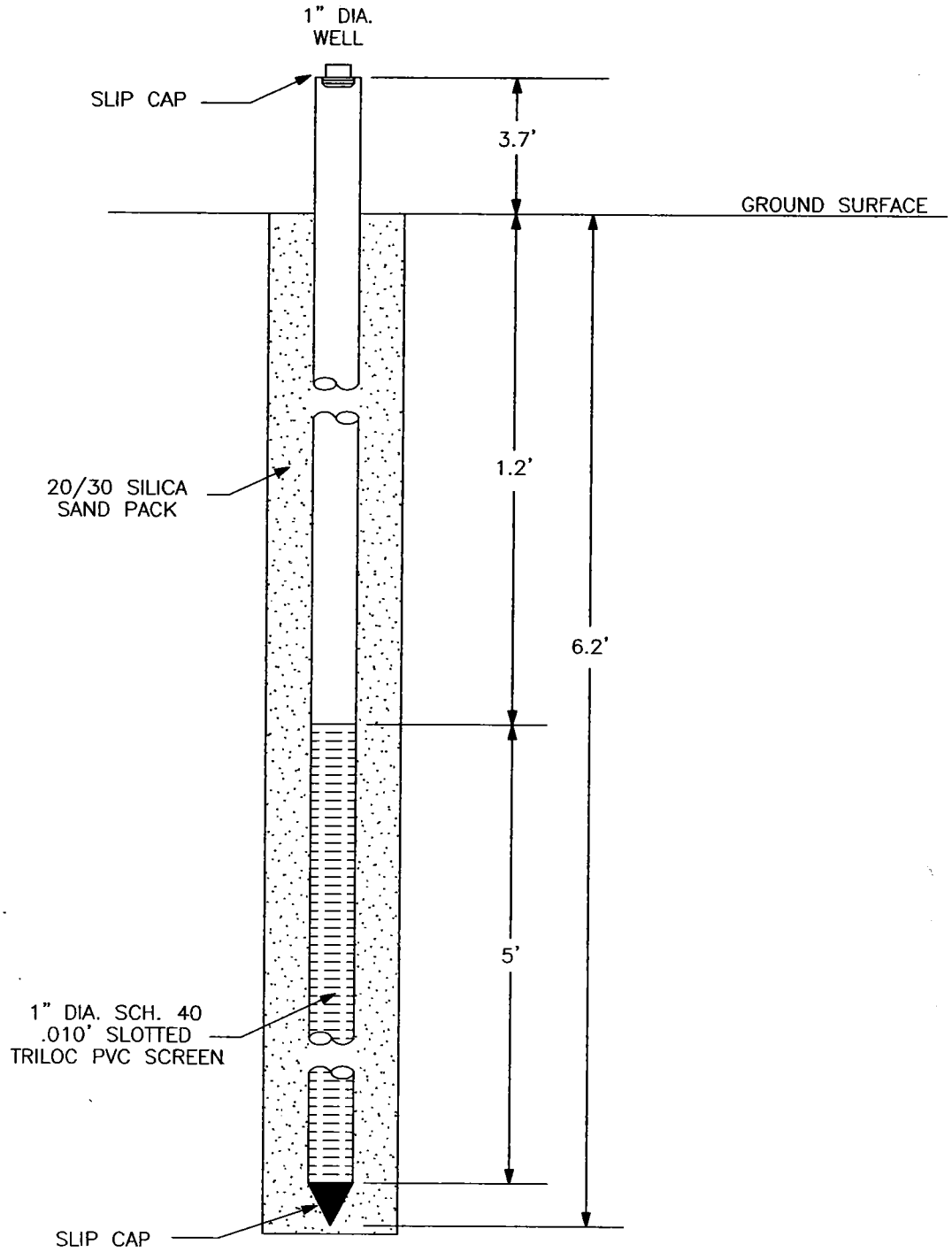
INSTALLATION DATE:	2-21-03
INSTALLED BY:	NODARSE & ASSOCIATES, INC.
DEPTH TO GROUNDWATER:	3.8 FEET
INSTALLATION METHOD:	HAND AUGER

WELL CONSTRUCTION DETAIL

CITY OF ORLANDO PARK

ORANGE COUNTY, FLORIDA

DRAWN: SW	NODARSE & ASSOCIATES, INC.		
CHKD: DBT			
SCALE: N.T.S.			
DATE: 2-25-03	PROJ. NO: W02-E-186	DETAIL: 2	



WELL No. TMW-3

INSTALLATION REPORT

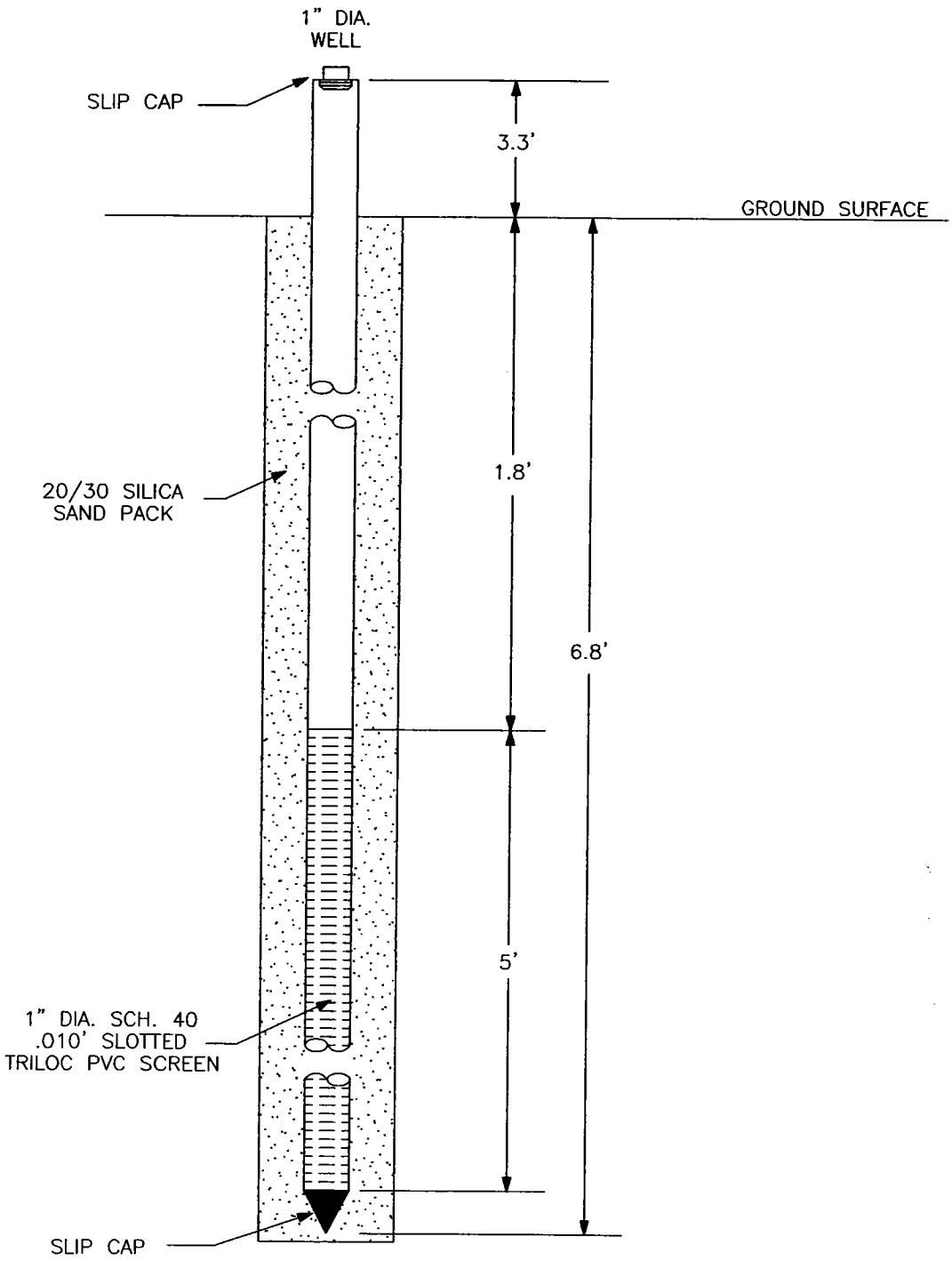
INSTALLATION DATE:	2-21-03
INSTALLED BY:	NODARSE & ASSOCIATES, INC.
DEPTH TO GROUNDWATER:	2.5 FEET
INSTALLATION METHOD:	HAND AUGER

WELL CONSTRUCTION DETAIL

CITY OF ORLANDO PARK

ORANGE COUNTY, FLORIDA

DRAWN: SW	NODARSE & ASSOCIATES, INC.	
CHKD: DBT		
SCALE: N.T.S.		
DATE: 2-25-03	PROJ. NO: W02-E-186	DETAIL: 3



WELL No. TMW-4

INSTALLATION REPORT

INSTALLATION DATE:	2-21-03
INSTALLED BY:	NODARSE & ASSOCIATES, INC.
DEPTH TO GROUNDWATER:	5.0 FEET
INSTALLATION METHOD:	HAND AUGER

WELL CONSTRUCTION DETAIL

CITY OF ORLANDO PARK

ORANGE COUNTY, FLORIDA

DRAWN: SW	NODARSE & ASSOCIATES, INC.	
CHKD: DBT		
SCALE: N.T.S.		
DATE: 2-25-03	PROJ. NO: W02-E-186	DETAIL: 4

ATTACHMENT C

PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

Client : Nodarse & Associates Inc.
1675 Lee Road
Winter Park, FL 32789-

Contact : Dave Twedell
Phone : (407) 740-6110

Laboratory Reference Number : 203020166

Project Name : NTC/City of Orlando Park
Project Number : W02-E-186

Chain of Custody : 29642

Laboratory ID	Matrix	Client ID	Status	Date/Time Sampled	
203020166-1	Water	TW-1	RUN	02/21/2003	11:25
203020166-2	Water	TW-2	RUN	02/21/2003	12:10
203020166-3	Water	TW-3	RUN	02/21/2003	12:50
203020166-4	Water	TW-4	RUN	02/21/2003	13:35

Number	Parameter	Description
4	EPA 608/8081	Chlorinated Pesticides
4	EPA 8310	PAH's by HPLC
4	EPA 8021	Volatile Organics
4	EPA 6010/200.7	Beryllium (Filtered) by ICAP
4	EPA 6010/200.7	Magnesium (Filtered) by ICAP
4	EPA 6010/200.7	Thallium (Filtered) by ICAP
4	EPA 6010/200.7	Vanadium (Filtered) by ICAP

PC&B Environmental Laboratories, Inc.

210 Park Road
Oviedo, FL 32765-8801
407-359-7194 - (FAX) 407-359-7197

Case Narrative

Dave Twedell
Nodarse & Associates Inc.
1675 Lee Road
Winter Park, FL 32789-

CASE NARRATIVE for Work Order: 203020166
Project Number: W02-E-186
Project Name: NTC/City of Orlando Park

This Case Narrative is a summary of events and/or problems encountered with this Work Order.

For samples requesting EPA 601/602/8021 analysis, the GCMS method EPA 624/8260 was substituted in order to generate the highest quality data possible at no additional cost.
For EPA 8310 PAH analysis, hits below 5 ppb (water) cannot be confirmed.

Definition of Flags

DL	=	No surrogate result due to dilution or matrix interference.
J	=	Estimated Value, value not accurate.
L	=	Off-scale high. Actual value is greater than value given.
Q	=	Sample analyzed beyond the accepted holding time.
T	=	Value reported is less than the laboratory method detection limit.
V	=	Analyte was both detected in the method blank and sample.

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765-8801
PHONE: 407-359-7194
FAX: 407-359-7197

Report of Analysis
Volatile Organics

CLIENT NAME: Nodarse & Associates Inc.
PROJECT NAME: NTC/City of Orlando Park
PROJECT NUMBER: W02-E-186
DATE RECEIVED: 02/21/2003
ANALYTICAL PROTOCOL: EPA 8021

Lab Reference Number	203020166-1	203020166-2	203020166-3	203020166-4
Client Sample ID	TW-1	TW-2	TW-3	TW-4
Date/Time Sampled	02/21/2003 11:25	02/21/2003 12:10	02/21/2003 12:50	02/21/2003 13:35
Date/Time Extracted	02/24/2003	02/24/2003	02/24/2003	02/24/2003
Date/Time Analyzed	02/24/2003 11:12	02/24/2003 11:46	02/24/2003 12:25	02/24/2003 13:03
Sample Matrix (as Received)	Water	Water	Water	Water
Analysis Confirmed	GCMS	GCMS	GCMS	GCMS
Dilution Factor	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l
Benzene	1.0 U	1.0 U	1.0 U	1.0 U
Bromobenzene	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	1.0 U	1.0 U	1.0 U	1.0 U
n-Butylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
sec-Butylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
tert-Butylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U
2,2-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichloropropene (cis)	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichloropropene (trans)	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobutadiene	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
p-Isopropyltoluene	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	1.0 U	1.0 U	1.0 U	1.0 U
n-Propylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	1.0 U	1.0 U	1.0 U	1.0 U

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765-8801
PHONE: 407-359-7194
FAX: 407-359-7197

Report of Analysis
Volatile Organics

CLIENT NAME: Nodarse & Associates Inc.
PROJECT NAME: NTC/City of Orlando Park
PROJECT NUMBER: W02-E-186
DATE RECEIVED: 02/21/2003
ANALYTICAL PROTOCOL: EPA 8021

Lab Reference Number	203020166-1	203020166-2	203020166-3	203020166-4
Client Sample ID	TW-1	TW-2	TW-3	TW-4
Date/Time Sampled	02/21/2003 11:25	02/21/2003 12:10	02/21/2003 12:50	02/21/2003 13:35
Date/Time Extracted	02/24/2003	02/24/2003	02/24/2003	02/24/2003
Date/Time Analyzed	02/24/2003 11:12	02/24/2003 11:46	02/24/2003 12:25	02/24/2003 13:03
Sample Matrix (as Received)	Water	Water	Water	Water
Analysis Confirmed	GCMS	GCMS	GCMS	GCMS
Dilution Factor	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l
MTBE	5.0 U	5.0 U	5.0 U	5.0 U
m & p-Xylene	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	1.0 U	1.0 U	1.0 U	1.0 U
(Surr) 1,2-Dichloroethane-d4 (%)	98	80	86	97
(Surr) Toluene-d8 (%)	130	119	102	104
(Surr) 4-Bromofluorobenzene (%)	84	82	86	77

U = Undetected. The value preceeding the 'U' is the RL for the analyte, based on dilution. Results reported on a Wet Weight basis.

NELAP- FDOH Certification # E83239

Reviewed by : LM

Quality Control Report for LCS Analysis

PAH's by HPLC

Matrix: Water
Lab Sample ID: LCS
QC Batch ID: 200302PAH008A
LCS Units: ug/l

Analysis Date: 02/21/2003
Preparation Date: 02/21/2003
Method: EPA 8310
Analyst: RM

Analyte	LCS Conc	LCS Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Acenaphthene	50.0	47.2	94	21	130
Acenaphthylene	25.0	22.5	90	28	129
Anthracene	1.0	0.9	87	30	135
Benzo(a)anthracene	2.5	2.3	93	40	127
Benzo(a)pyrene	2.5	2.3	91	23	135
Benzo(b)fluoranthene	1.0	0.9	94	22	141
Benzo(ghi)perylene	4.0	3.5	87	25	135
Benzo(k)fluoranthene	1.0	0.9	85	27	136
Chrysene	2.5	2.4	96	29	131
Dibenzo(ah)anthracene	10.0	9.3	93	19	143
Fluoranthene	2.5	2.5	99	33	127
Fluorene	5.0	4.6	93	26	131
Indeno(123cd)pyrene	2.5	2.1	85	28	140
Naphthalene	25.0	23.8	95	18	137
Phenanthrene	2.5	3.0	122	24	134
Pyrene	5.0	4.8	95	24	138

Quality Control Report for Spike Analysis

INORGANICS

Analyte		Spike Amount	Sample Result	Spike Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Method: EPA 6010/200.7	QC Batch: 200302RC114	Sample ID: 203020166-4	Date Prep: 02/24/2003		Date Anal: 02/24/2003	Analyst: GG	
Beryllium, Filtered		100 ug/l	0	96	96	80	120
Method: EPA 6010/200.7	QC Batch: 200302RC114	Sample ID: 203020166-4	Date Prep: 02/24/2003		Date Anal: 02/24/2003	Analyst: GG	
Magnesium, Filtered		5 mg/l	2	7	88	80	120
Method: EPA 6010/200.7	QC Batch: 200302RC114	Sample ID: 203020166-4	Date Prep: 02/24/2003		Date Anal: 02/24/2003	Analyst: GG	
Thallium, Filtered		100 ug/l	0	98	98	80	120
Method: EPA 6010/200.7	QC Batch: 200302RC114	Sample ID: 203020166-4	Date Prep: 02/24/2003		Date Anal: 02/24/2003	Analyst: GG	
Vanadium, Filtered		100 ug/l	0	97	97	80	120

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

W02-E-186 Riser: 3.3'

SITE NAME: NTC City of Orlando Park	SITE LOCATION: Orlando, FL.
WELL NO: TW-4	SAMPLE ID: / DATE: 2/21/03

PURGING DATA

WELL DIAMETER (in): 1"	TOTAL WELL DEPTH (ft): 10.1	STATIC DEPTH TO WATER (ft): 8.15	WELL CAPACITY (gal/ft): .04

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (10.1 - 8.15) x .04 = .078 Gal

PURGE METHOD: Peris. Pump	PURGE INITIATED AT: 1313	PURGE ENDED AT: 1325	TOTAL VOL. PURGED (gal):

TIME	VOLUME PURGED ~~(gal)~~ #	CUMUL VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1315	1	.078	.04	8.23	6.58	21.2	99.8	1.58	1000	Lt. Brn	None
1320	3.56	.278	↓	↓	6.41	21.1	100.7	1.04	540	↓	↓
1325	6.12	.478	↓		6.36	21.3	100.5	1.03	204	↓	↓

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nodarse	SAMPLER(S) SIGNATURE(S): M. Burns
SAMPLING METHOD(S): Pump / Pinch Tube	SAMPLING INITIATED AT: 1326 / SAMPLING ENDED AT: 1335
FIELD DECONTAMINATION: (Y) N	FIELD-FILTERED: Y (N) / DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	CG	80 mL	HCL	–	–	8021
1	AG	1 Liter	–	–	–	8310
1	AG	1 Liter	–	–	–	608 Pest.
1	PE	250 mL	–	–	–	Metals Filt.

REMARKS:

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; PE = POLYETHYLENE; O = OTHER (SPECIFY)

NOTE: The above do not constitute all of the information required by Chapter 62-160, F.A.C.

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Riser 3.7'

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: NTC / City of Orlando Park		SITE LOCATION: Orlando, FL	
WELL NO: TW-3	SAMPLE ID:		DATE: 2/21/03

PURGING DATA

WELL DIAMETER (in): 1"	TOTAL WELL DEPTH (ft): 9.90'	STATIC DEPTH TO WATER (ft): 6.35	WELL CAPACITY (gal/ft): .04

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (9.90 - 6.35) x .04 = 0.14

PURGE METHOD: Peristaltic Pump	PURGE INITIATED AT: 1222	PURGE ENDED AT: 1236	TOTAL VOL PURGED (gal):

TIME	VOLUME PURGED ~~(gal)~~ #	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1226	1	0.14	.04	7.63	6.21	21.5	241	0.63	>1000	Drk. Brn	ND
1231	2.42	0.34	↓	↓	6.16	21.3	238	0.31	>1000	↓	↓
1236	3.85	0.54	↓	↓	6.14	21.6	197	0.34	>1000	↓	↓

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nodarse	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Pump / 1 inch tubing	SAMPLING INITIATED AT: 1237	SAMPLING ENDED AT: 1250
FIELD DECONTAMINATION: (Y) N	FIELD-FILTERED: Y (N)	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	CG	80 mL	HCL	–	–	8021
1	AG	1 Liter	–	–	–	608
1	AG	1 Liter	–	–	–	8310
1	PE	250 mL	–	–	–	<1 metals

REMARKS:

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; PE = POLYETHYLENE; O = OTHER (SPECIFY)

NOTE: The above do not constitute all of the information required by Chapter 62-160, F.A.C.

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

Riser 30

SITE NAME: NTC / City of Orlando Park		SITE LOCATION: Orlando FL	
WELL NO: TW-2	SAMPLE ID:		DATE: 2/21/03

PURGING DATA

WELL DIAMETER (in): 1"	TOTAL WELL DEPTH (ft): 8.95	STATIC DEPTH TO WATER (ft): 6.80	WELL CAPACITY (gal/ft): .04

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (8.95 - 6.80) x .04 = .086

PURGE METHOD: Peristaltic Pump	PURGE INITIATED AT: 1136	PURGE ENDED AT: 1153	TOTAL VOL. PURGED (gal): 0.68

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1138	1	0.086	.04	6.89	6.74	23.0	346	1.17	71000	Brn	none
1143	3.25	0.28			6.76	22.6	348	0.67	202		
1148	5.58	0.48			6.77	22.6	346	0.58	54.8		
1153	7.90	0.68			6.78	22.6	346	0.63	33.9	Clear	

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: NODARSE	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Pump / Pinch Tubing	SAMPLING INITIATED AT: 1154	SAMPLING ENDED AT: 1210
FIELD DECONTAMINATION: (Y) N	FIELD-FILTERED: Y (N)	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	CG	80 mL	HCL	-	-	8021
1	AG	1 Liter	-	-	-	608
1	AG	1 Liter	-	-	-	8310
1	PE	250 mL	-		-	4 metals - LAB Filter

REMARKS:

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; PE = POLYETHYLENE; O = OTHER (SPECIFY)

NOTE: The above do not constitute all of the information required by Chapter 62-160, F.A.C.

.04

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

Rev 2.9

SITE NAME: NTC / City of Orlando		SITE LOCATION: Orlando, FL
WELL NO: TW-1	SAMPLE ID:	DATE: 2-21-03

PURGING DATA

WELL DIAMETER (in): 1"	TOTAL WELL DEPTH (ft): 8.05	STATIC DEPTH TO WATER (ft): 5.67	WELL CAPACITY (gal/ft): .04

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (8.05 - 5.67) X .04 = 0.095

PURGE METHOD: Peristaltic Pump	PURGE INITIATED AT: 1055	PURGE ENDED AT: 1109	TOTAL VOL PURGED (gal):

TIME	VOLUME PURGED ~~(gal)~~	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1058	1	0.12	.04	5.67	6.23	23.8	422	0.93	1000	Brn	ND
1103	1.8	0.22			6.31	23.0	420	0.61	423		
1108	3.5	0.42			6.40	22.3	413	0.47	322		

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nadarse & Assoc.	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Peristaltic Pump Pinch Tubing	SAMPLING INITIATED AT: 1110	SAMPLING ENDED AT: 1125
FIELD DECONTAMINATION: (Y) N	FIELD-FILTERED: Y (N)	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	CG	80 mL	HCL	–	–	8021
1	AG	1 Liter	–	–	–	8310
1	AG	1 Liter	–	–	–	608 Pest.
1	PE	250 mL	–	–	–	4 metals

REMARKS:

MATERIAL CODES: AG = AMBER GLASS; CG = CLEAR GLASS; PE = POLYETHYLENE; O = OTHER (SPECIFY)

NOTE: The above do not constitute all of the information required by Chapter 62-160, F.A.C.

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) HACH 2100P **INSTRUMENT #** 0104000028774

PARAMETER: *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP

☒ TURBIDITY ☐ RESIDUAL CL ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A 6.05

Standard B 56.0

Standard C 481

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
2/21/03	1031	A	6.05	6.00		Yes	Init	MB
		B	56.0	56.4				
		C	481	482				
2/21/03	1350	A	6.05	6.03			cont	MB.
		B	56.0	56.0				
		C	481	481				

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) YSI 55 **INSTRUMENT #** 96M0178AF

PARAMETER: *[check only one]*

☒ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP

☐ TURBIDITY ☐ RESIDUAL CL ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A 22.9

Standard B _____

Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
2/21/03	1033	A	22.9	22.9		yes	init	NA
2/21/03	1353	A	23.6	23.6			cont	

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) YSI 55 **INSTRUMENT #** 96M0178AF

PARAMETER: *[check only one]*

- ☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP
- ☐ TURBIDITY ☐ RESIDUAL CL ☒ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A 100% Auto Cal.

Standard B _____

Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
2/21/03	1034	A	100%	90%		Yes	Init	MD
|	1354	A	100%	94%		|	Cont	MD

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) OAKTON 10 **INSTRUMENT #** 40453

PARAMETER: *[check only one]*

- ☐ TEMPERATURE
- ☐ CONDUCTIVITY
- ☐ SALINITY
- ☒ pH
- ☐ ORP
- ☐ TURBIDITY
- ☐ RESIDUAL CL
- ☐ DO
- ☐ OTHER _____

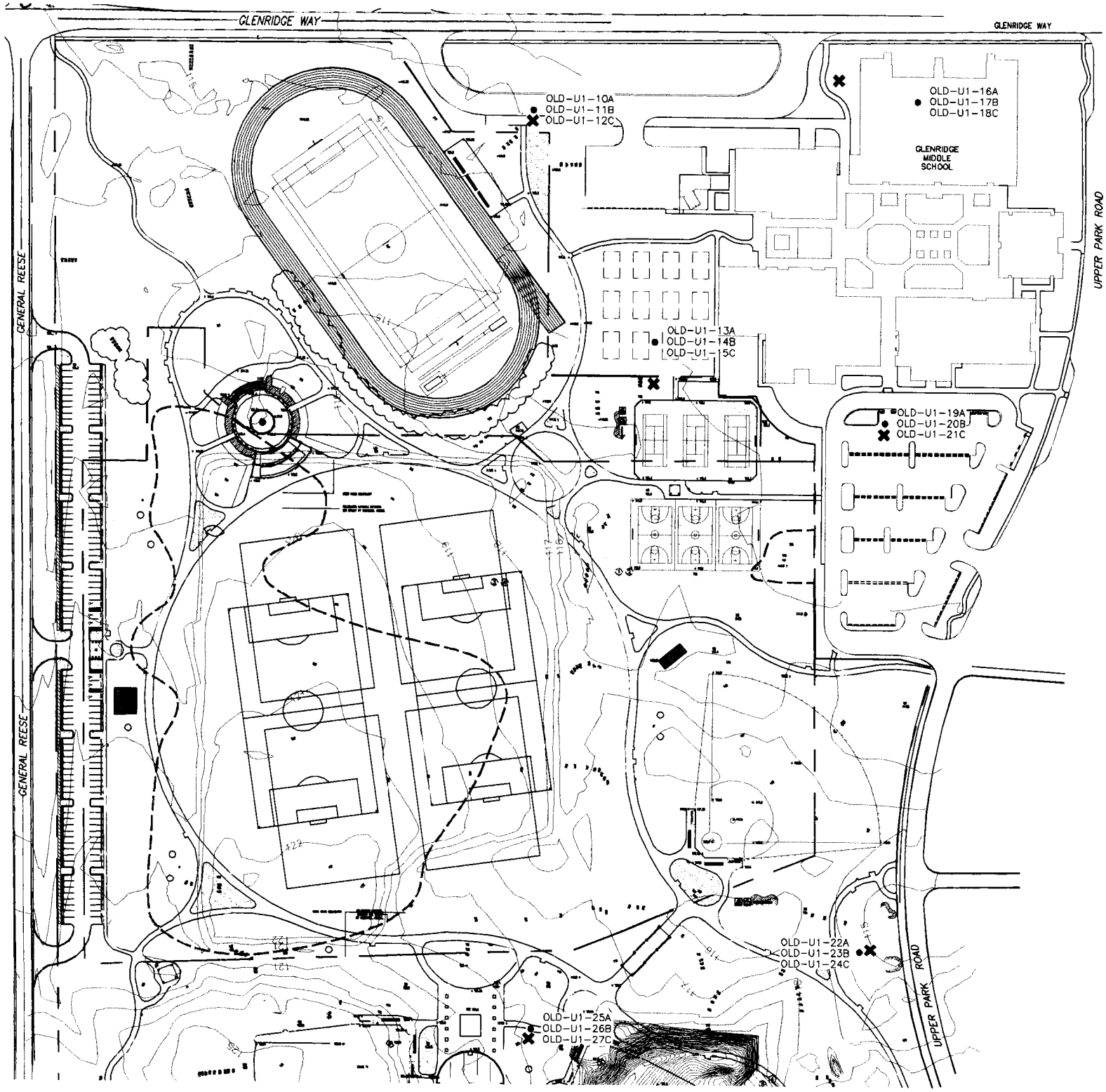
STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A 4.0

Standard B 7.0

Standard C 10.0

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
2/21/03	1036	4.0		4.00		Yes	Init	MP.
		7.0		7.14				
		10.0		9.71				
12/21/03	1347	A	4	3.99		yes	Cont	MA
		B	7	7.02				
		C	10	10.01				


GLENRIDGE WAY
GLENRIDGE WAY
GENERAL REESE
GENERAL REESE
UPPER PARK ROAD
UPPER PARK ROAD
GLENRIDGE MIDDLE SCHOOL
OLD-U1-10A
OLD-U1-11B
OLD-U1-12C
OLD-U1-13A
OLD-U1-14B
OLD-U1-15C
OLD-U1-16A
OLD-U1-17B
OLD-U1-18C
OLD-U1-19A
OLD-U1-20B
OLD-U1-21C
OLD-U1-22A
OLD-U1-23B
OLD-U1-24C
OLD-U1-25A
OLD-U1-26B
OLD-U1-27C