SEMS-RM DOCID # 1192204

Calocerinos & Spina
CONSULTING ENGINEERS
1020 Seventh North Street, Liverpool, NY 13088 · (315) 457-6711

January 18, 1985

Mr. Roy Thielking
Project Manager
Facility Permitting Unit
Southern California Section
Toxic Substances Control Division
Department of Health Services
197 Broadway, Room 7128
Los Angeles, California 90052

Re: Site Remediation Plan
Trent Tube Plant
Fullerton, California
CAD 008325110

File: 469.003

Dear Mr. Thielking:

We have completed our site assessment for the above-referenced Project and present herein the results of that assessment and our proposed plan for remediation of the site.

Site Sampling

A total of 14 borings were completed as originally proposed at the rear of the facility and at background locations. An additional set of three borings (E Series) were completed at selected locations requested by you during the on-site program. Locations of all borings are indicated on the attached Site Plan (Figure 1). Drilling was conducted on December 26, 27, and 28, 1984, by Pioneer Drilling Company with inspection, sample preservation and logging conducted by Mr. David Bramwell, PG, of IT Corporation. Field supervision was performed by Mr. Andrew Diefendorf, CPG, of Calocerinos & Spina.

Soil samples were taken at approximately 3-, 5- and 10-foot depth intervals in all borings with the exception of the E Series at which location samples were obtained at approximately 2-, 4- and 6-foot depth intervals. Samples were either maintained within capped 6-inch or 4-inch California Sampler sleeves, which were then placed in polyethelene bags and stored in teflon-capped glass jars; or the samples were removed from the sampler and placed directly in laboratory-prepared, teflon-capped sample jars. All samples were refrigerated and air freighted to the analytical laboratory at the end of each day of drilling.

Results of Investigations

Attachment A presents the analytical results of all samples processed by California Analytical Laboratory. Of the 26 organic parameters included within the complete USEPA 601 and 602 scans performed, only 6 were identified on the site. Summary results of analyses for these six parameters are presented

NGSC-DTSC004954

as Table 1. Note that of the samples analyzed at 17 locations only 3 (A-1, D-2 and C-3) indicate soil contamination above the allowable limit of 1 mg/kg at a depth of 3 feet. Only two locations (A-1 and C-4) indicated detectable contamination at a sampling depth in excess of three feet. With the exception of locations D-2 and C-3, contaminant concentrations detected were only slightly over the allowable limit.

Based on our review of previous soil removal (see Figure 2) and soil samples taken during this investigation (see Drill Logs, Attachment B), it is our opinion that the majority of contamination was removed during the original remedial efforts. Remnant contamination appears to be concentrated within a shallow (3.5- to 4.5-foot depth) zone of silty organic soil found in a limited area at the rear of the site (see Figures 3 and 4). Our past experience has shown that these fine-grained materials tend to adsorb and retain more of the solvents than the coarser and more porous underlying sand materials.

Portable organic vapor meter (OVM) readings taken during the sampling support the findings that the organic silty sand layer is retaining most of the spilled solvents. While the OVM readings indicate organic vapors dispersed throughout the relatively porous sandy deposts on the site, based on plots of OVM readings (Figures 5 through 7) at the three sample depths, two distinctive sources of contaminant are apparent. Both zones of contamination appear to result from surface runoff away from solvent storage areas in the vicinity of A-1 and A-2, respectively.

Previous excavation of soil from the area of A-2 resulted in removal of any detectable soil contamination in that area, although trace organic vapors are still present. On the other hand, the high concentration of solvents "downsurface" from A-2 at D-2 probably represents entrapment of the solvents within the organic soils immediately beneath the surficially lowest point of surface drainage between A-2 and the concrete drainage swale. The organic layer in this area is of low enough permeability to create a small pocket of trapped or perched water.

Inasmuch as fluid flow in the vadose (unsaturated) zone of the sand deposits beneath the organic layer should be vertical for approximately 80 feet (depth of water table), the spread of contamination at the rear of the site is probably directly related to surface water wash during periods of rain. Infiltrating solvent would be adsorbed by the finer-grained soil layer allowing that layer to act as a potential contaminant source during rainy periods. Note from Figures 3 and 5 that there is a strong correlation between the limits of detectable (greater than 1 ppm) OVM readings and the apparent limits of the organic silty sand layer. The significant quantity of rain prior to and during the period of this investigation may account for leaching of solvents from that layer such that detectable solvents were present at depth in a few of the borings.

It should also be noted that no solvents were detectable at depth in areas where the stratigraphic section of sand is void of any silty organic containing layers. In these areas of relatively clean coarse sand there is very little particle surface upon which the solvent can be retained. Any solvent reaching depth in these areas has already escaped and, if it were not for the limited presence of an organic layer, no solvents would probably be currently detectable on the site.

The key to remediation of this site, therefore, becomes (1) removal of the primary source of contamination, the organic soil layer, and (2) prevention of further migration of any small quantities of solvent contained in deeper sands by elimination of surface water infiltration.

Controlling factors in the practicality of applied methods of remediating this site include (1) the proximity of various structures and (2) the potential low angle of repose of any sands which are excavated. Removal of soils in close proximity to structures may threaten the stability of those structures.

Proposed Additional Remediation

Because some remnant soil contamination is still present at the rear of the site, we recommend the following remedial actions:

1. Removal of all heavily contaminated soils outlined in Area "A" of Figure 8 to a depth of 4.5 feet (vertically, if possible) and transport to an approved disposal facility. This represents all contaminated soils within an approximately eight-foot radius of D-2.

2. Removal of all soils in Areas "B" and "C" (side slopes of 1:1.5, if possible) to the base of the organic layer (3.5 to 4.5 feet in depth). Note that these areas were delineated by overlay analysis of Figure 3 and 5.

3. All soils excavated from Areas "B" and "C" to be loosely spread in a selected area on the east side of the site in a layer not to exceed four inches in thickness and allowed to aerate for a minimum of one week.

4. Replacement of aerated soils back in excavation in compacted lifts not to exceed one-foot in thickness and redressing to ground surface with a minimum of four inches of approved gravel base.

In addition, we recommend removal of solvent-stained soils along the embankments of the drainage swale at E-2 to a depth of six inches with disposal at an approved disposal site, and replacement of soils with granular (gravel) materials.

It is assumed that the volumes of soil to be removed as proposed may be the minimum necessary. In order to assess actual soil conditions encountered during remediation, we would utilize a portable OVM to determine if all pockets of significant contamination have been removed and if additional removal is required at time of excavation.

In order to facilitate successful closure of this facility, we request your immediate review and comment on this Proposal. Thank you in advance for your assistance in this matter.

Respectfully submitted,

CALOCERINOS & SPINA

Andrew F. Diefendorf, CPG
Manager, Applied Geoscience

AFD:mts

CC: Mr. R. Phillips (w/enc)

TABLE 1

TRENT TUBE

FULLERTON, CALIFORNIA

RESULTS OF ANALYSES

		Contaminant Concentration in mg/kg (parts per million)					
		Method 601			Method 602		
Sample Point	Depth (feet)	1,1,1-Trichloroethane	Tetrachloroethylene	Trichloroethylene	Ethyl-Benzene	Xylene	Toluene
A-1	3.5	1.2	1.1	LTD	1.7	2.7	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	1.5	1.7	LTD	LTD	LTD	LTD
A-2	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	LTD
A-3	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	LTD
A-4	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	LTD
B-1	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	LTD
B-2	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	LTD
B-3	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	LTD
C-1	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	--	--	--	--	--	--
	10.5	--	--	--	--	--	--
C-2	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	--	--	--	--	--	--
	10.5	--	--	--	--	--	--
C-3	3.5	2.2	5.3	LTD	LTD	LTD	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	LTD

Table 1 (Continued)
Page 2

Sample Point	Depth (feet)	Contaminant Concentration in mg/kg (parts per million) Method 601 1,1,1-Tri-Chloroethane	Tetrachloro-ethylene	Trichloro-ethylene	Method 602 Ethyl-Benzene	Xylene	Toluene
C-4	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	1.1
D-1	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	--	--	--	--	--	--
	10.5	--	--	--	--	--	--
D-2	3.5	780	21	70	LTD	95	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	LTD
D-3	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	5.0	LTD	LTD	LTD	LTD	LTD	LTD
	10.5	LTD	LTD	LTD	LTD	LTD	LTD
E-1	3.5	LTD	LTD	LTD	LTD	LTD	LTD
	4.0	--	--	--	--	--	--
	6.0	--	--	--	--	--	--
E-2	2.0	LTD	LTD	LTD	LTD	LTD	LTD
	4.0	--	--	--	--	--	--
	6.0	--	--	--	--	--	--
E-3	2.0	LTD	LTD	LTD	LTD	LTD	LTD
	4.0	--	--	--	--	--	--
	6.0	--	--	--	--	--	--

NOTES:

1. LTD = Less Than Detectable limit of 0.5 mg/kg.
2. -- = Sample Not Analyzed

ATTACHMENT "A" D.B.

California Analytical Laboratories, Inc.
2544 Industrial Boulevard • West Sacramento, CA 95691 • (916) 372-1393

December 28, 1984
Lab No. 19999
Received: 12/27/84
Project No. 847025

RECEIVED
JAN 02 1985

Ed Serota
IT Corporation
17500 Redhill Avenue
Suite 202
Irvine, CA 92714

Seventeen soil samples were received in aluminum core tubes to be analyzed for halogenated and aromatic volatile organics. RUSH.

CAL I.D.	Sample I.D.		
19999-1	A-1	3 1/2'	12/26/84
-2	A-1	5 1/2'	12/26/84
-3	A-1	10 1/2'	12/26/84
-4	A-2	3 1/2'	12/26/84
-5	A-2	5 1/2'	12/26/84
-6	A-2	10 1/2'	12/26/84
-7	A-3	3 1/2'	12/26/84
-8	A-3	5 1/2-6'	12/26/84
-9	A-3	10 1/2-11'	12/26/84
-10	B-1	3 1/2-4'	12/26/84
-11	B-1	7 1/2-8'	12/26/84
-12	B-1	10 1/2-11'	12/26/84
-13	B-2	3-3 1/2'	12/26/84
-14	B-2	5-5 1/2'	12/26/84
-15	B-3	3 1/2-4'	12/26/84
-16	B-3	5 1/2-6'	12/26/84
-17	B-3	10 1/2-11'	12/26/84

Results of analysis by EPA Methods 601 and 602 are on the attached data sheets.

Charles J. Soderquist, PhD
Vice President

Ben N. Buechler
GC Lab Manager

jb

This report is for the sole and exclusive use of the client to whom it is addressed.
Samples not destroyed in testing are retained a maximum of thirty (30) days unless otherwise requested.

ATTACHMENT "B"

IT CORPORATION

TRANSMITTAL SHEET

TO Dick Klippel
Calocerinos & Spina
1020 Seventh North Street
Liverpool, New York 13088

DATE January 4, 1985

OUR JOB NO. 847025

YOUR ORDER NO.

SUBJECT Trent Tube Division Facility
2100 E. Orangethrope Ave.
Fullerton, California

WE ARE SENDING YOU VIA: Mail

FOLLOWING ITEMS: Copies of boring logs of subject property
A-1,2,&3
B-1,2,&3
C-1,2,3,4,&5
D-1,2,&3
E-1,2,&3'

NO. OF COPIES SUBMITTED: One each

COPIES TO:

SUBMITTED BY: David D. Bramwell
David D. Bramwell

IT CORPORATION • 17500 RED HILL AVENUE • IRVINE, CALIFORNIA 92714 • (714) 261-6441

LOCATION OF BORING

Background OVM = 0.4-0.5

JOB NO.	CLIENT	LOCATION
847025	Trant Tube	Fullerton

DRILLING METHOD: Mobil 50 @ 8" diameter hollow stem auger

SAMPLING METHOD: GMB = 18" drive Sampler with 2"-OD and 6" to 4" long sleeves

BORING NO. A-1

SHEET 1 OF 1

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILLING

START	FINISH
TIME 2:20P	TIME 3:00P
DATE 12/26/84	DATE 12/26/84

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0		brown to black	Silty Sand	loose moist trace to some gravel
						1	SM			
						2				
						3		lt. brown	Silty Sand	moist, moderate loose to dense trace fine pebble gravel
GMB	18/16	5.2		3½	6/7/8	4				
						5	SM			
GMB	19/17	2.3		5½	7/10/10	6				
						7				
						8				
						9				
						10				
GMB	19/16	3.6		13½	10/21/31	11				TD = 11.5'
						12				
						13				
						14				
						15				
						16				
						17				
						18				
						19				
						20				

DRILLING CONTRACTOR Pacific Drilling

DRILLING FOREMAN Ernie

DATE 12/26/84

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004962

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 @ 8" diameter hollow stem auger		BORING NO. A-2
			SHEET 1 OF 1
	SAMPLING METHOD GMB = 18" drive Sampler with 2"-OD and 6" to 4" long sleeves		DRILLING START TIME 1:40P; FINISH TIME 2:10P
Background OVM = 0.4-0.5	WATER LEVEL		
	TIME		
	DATE		DATE 12/26/84; DATE 12/26/84
	CASING DEPTH		

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat + gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0	SM/ML	brown	Sandy silt	fill wet to moist, some cobble gravel
						1				
						2				
		9.2				3	SP	lt. brown	Sand	dry to moist, moderately dense to dense, sand is medium to coarse grained, trace pebble gravel, trace silt
GMB	18/15		3½	5/8/4		4				
		3.5				5				
GMB	18/14		5½	7/11/18		6				
						7				
						8				
						9				
		2.2				10				
GMB	19/16		10½	9/9/26		11				TD = 11.5'
						12				
						13				
						14				
						15				
						16				
						17				
						18				
						19				
						20				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Ernie

DATE 12/26/84

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004963

LOCATION OF BORING	JOB NO.	CLIENT	LOCATION
	847025	Trent Tube	Fullerton

DRILLING METHOD: Mobil 50 with 8" diameter hollow stem auger

BORING NO.: A-3

SHEET: 1 OF 1

SAMPLING METHOD: GMB = 18" drive sampler with 2"-OD and 4" to 6" long sleeves.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILLING	START	FINISH
TIME	1:00 P	1:35P
DATE	12/20/84	12/20/84

Background OVM = 0.4 - 0.5

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0				
						1	SM	brown	Silty Sand	moist, moderate dense, Sand is fine grained
						2				
						3				
		0.8						H brown	Sand	moist to dry moderate dense to dense sand is medium to coarse grained clean to trace silt, trace pebble grained
GMB	19/15		3½'	8/9/9		4	SP			
						5				
		1.1								
GMB	18/16		5½'	7/10/11		6				
						7				
						8				
						9				
		1.3				10				
GMB	19/17		10½'	16/25/32		11				TD = 11.5'
						12				
						13				
						4				
						5				
						6				
						7				
						8				
						9				
						0				

DRILLING CONTRACTOR: Frontier

DRILLING FOREMAN: Ernie

DATE: 12/20/84

DATE

FIELD ENGINEER: DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004964

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
Background OVM = 0.2	DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger		BORING NO. B-1
			SHEET 1 OF 1
	SAMPLING METHOD Shelby tubes/GMB = 18" drive sampler with 2"-OD and 4" to 6" long sleeves		DRILLING START TIME 9:35A / FINISH TIME 12:15P
	WATER LEVEL / TIME / DATE / CASING DEPTH		DATE 12/20/84 / DATE 12/20/84

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat (W) Surficial fill

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS; CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0	SM	brown	Silty Sand	dry to moist, moderate loose, sand is fine grained
						1				
						2				
		0.2				3				
shelby			3½'			4	SP	lt. brown	Sand	dry, moderate loose, sand is fine to medium grained
						5				
shelby			no recovery			6				
						7		grey	Sand	dry dense, sand is medium to coarse grained.
GMB	18/14		7½'	4/4/5		8	SP			
						9				
						10				
GMB	18/16		10½'	15/18/27		11				TD = 11.5'
						12				
						13				
						14				
						15				
						16				
						17				
						18				
						19				
						20				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Ernie

DATE 12/20/84

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004965

LOCATION OF BORING	JOB NO. 847025	CLIENT Tren. Tube	LOCATION Fullerton
Background OVM = 0.1	DRILLING METHOD Mobil 50 with 8" diameter hallow stem auger		BORING NO. B-2
			SHEET 1 OF 1
	SAMPLING METHOD 24" long shelby tubes		DRILLING START TIME 9:00A, FINISH TIME 9:30A
	WATER LEVEL / TIME / DATE / CASING DEPTH		DATE 12/20/94, DATE 12/20/94

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0	SM	brown	Silty Sand	moist, moderate loose, sand is fine grained
						1				
						2	SP	lt. brown	Sand	moist moderate loose, sand is fine grained, trace silt
		0.1				3				
shelby						4				grades to dry at 4' depth.
		0.1				5				
shelby						6				
						7				
						8				
						9	SP	lt. brown	Sand	dry moderate dense sand is fine to coarse grained trace pebble gravel.
						10				
shelby	no recovery					11				
						12				
shelby	no recovery					13				
						14				TD = 14.0'
						15				
						16				
						17				
						18				
						19				
						20				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Pierce

DATE 12/20/94

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004966

JOB NO.	CLIENT	LOCATION
847025	Trenr Tube	Fullerton

LOCATION OF BORING

DRILLING METHOD: Mobil 50 with 8" diameter hollow stem auger

BORING NO.: B-3

SHEET: 1 OF 1

SAMPLING METHOD: GMB = 18" drive sampler with 2"-OD and 6" to 4" long sleeves

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILLING	START	FINISH
TIME	12:20P	12:50P
DATE	12/20/84	12/20/84

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled.

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0	SM/ML	brown	Sand Silt	moist, loose
						1				
						2				
						3	SM	brown	Silty Sand	moist moderate dense, Sand is fine grained.
GMB	18/16		3½	7/10/11		4				
						5	SP	lt. brown	Sand	dry to moist moderate dense to dense sand is medium to coarse grained trace pebble gravel, clean.
GMB	18/16		5½	9/12/16		6				
						7				
						8				
						9				grades with increase of pebble gravel and fines.
						10				
GMB	18/14		10½	13/19/30		11				
										TD = 11.5'
						12				
						13				
						14				
						15				
						16				
						17				
						18				
						19				
						20				

DRILLING CONTRACTOR: Pioneer

DRILLING FOREMAN: Ervin

DATE: 12/20/84

FIELD ENGINEER: DDB

EDITED BY: DATE:

IT CORPORATION

NGSC-DTSC004967

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 with 8" diameter hallow stem auger		BORING NO. C-1
	SAMPLING METHOD GMB = 18" drive Sampler with 2"-OD and 6" to 4" long sleeves.		SHEET 1 OF 1
Background OVM = 0.4 - 0.5			DRILLING START TIME 1:45P; FINISH TIME 2:35P
	WATER LEVEL / TIME / DATE / CASING DEPTH		DATE 12/27/84; DATE 12/27/84

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0				
						1	SM/SP	brown	Sand	dry to moist moderate dense to dense Sand is medium to coarse grained, trace to some silt.
						2				
		0.9				3				
GMB	13/15		3½	4/8/17		4				
		1.2				5				
GMB	13/16		5½	15/15/20		6				
						7				
						8				
						9				
		1.0				10				
GMB	18/16		10½	19/19/23		11				
						12				TD = 11.5'
						13				
						4				
						5				
						6				
						7				
						8				
						9				
						0				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Eric

DATE 12/27/84

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004968

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger		BORING NO. C-2
			SHEET 1 OF 1
	SAMPLING METHOD GMB = 18" drive Sampler with 2"-OD and 6" to 4" long sleeves		DRILLING START TIME 1:30P; FINISH TIME 2:00P
Background OVM = 0.4-0.5	WATER LEVEL / TIME / DATE / CASING DEPTH		DATE 12/27/84; DATE 12/27/84

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0				
						1	SP	brown	Sand	moist, moderate dense. Sand is medium grained.
						2				
							SP	lt brown	Sand	moist dense sand is medium to coarse grained, trace fine pebble gravel, clean to trace silt.
		0.6				3				
GMB	18/14		3½'	8/9/13		4				
						5	ML	black	Silt	moist to wet, soft, organics
		12.6								
GMB	18/14		5½'	8/9/14		6	SP	brown to lt brown	Sand	moist dense sand is medium to coarse grained, trace fine pebble gravel, clean to trace silt.
						7				
						8				
						9				
		0.9				10				
GMB	18/17		10½'	6/27/38		11				
										TD = 11.5'
						12				
						13				
						4				
						5				
						6				
						7				
						8				
						9				
						0				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Ernie

DATE 12/27/84

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004969

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger		BORING NO. C-3
			SHEET 1 OF 1
	SAMPLING METHOD GMB = 18" drive Sampler with 2"-OD and 6" to 4" long sleeves.		DRILLING START TIME 10:55A; FINISH TIME 11:30A
	WATER LEVEL / TIME / DATE / CASING DEPTH		DATE 12/27/84; DATE 12/27/84

Background OVM = 0.4 - 0.5

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0	SP/SM	brown	Sand	dry to moist, moderate loose, Sand is fine grained, Some silt.
						1				
						2	SP/SM	lt. brown	Sand	dry to moist, moderate dense, trace to some silt.
		1.5				3				
GMB	18/15		3½'	4/5/6		4	ML	brown to black	silt	moist, soft, organics
						5				
		11.5								
GMB	18/16		5½'	6/10/10		6	SP	brown to lt. brown	Sand	dry to moist dense, Sand is medium to coarse grained trace fine pebble gravel clean to trace silt.
						7				
						8				
						9				
		1.8				10				
GMB	18/16		10½'	11/22/33		11				
						12				TD = 11.5'
						13				
						4				
						5				
						6				
						7				
						8				
						9				
						0				

DRILLING CONTRACTOR Forner

DRILLING FOREMAN Ernie

DATE 12/27/84

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004970

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger		BORING NO. C-4
			SHEET 1 OF 1
	SAMPLING METHOD GMB = 18" drive sampler with 2"-OD and 6" to 4" long sleeves		DRILLING
	WATER LEVEL		START / FINISH
	TIME		TIME 9:10A / TIME 9:40A
Background OVM = 0.4 – 0.5	DATE		DATE 12/22/84 / DATE 12/22/84
	CASING DEPTH		

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0				
						1	SM	brown to black	Silty Sand	moist to wet, moderate loose
						2				
		5.2				3	ML	black	Silt	soft, organics
GMB	18/16		3½	5/6/7		4				
		0.9				5	SP	H. brown	Sand	moist moderate dense to dense clean to trace silt
GMB	18/16		5½	6/8/9		6				
						7				
						8				
						9				
		0.5				10				
GMB	18/17		10½	11/20/28		11				
						12				TD = 11.5'
						13				
						14				
						15				
						16				
						17				
						18				
						19				
						20				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Frank

DATE 12/27/84

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004971

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger		BORING NO. C-5
	SAMPLING METHOD GMB=18" drive sampler with 2"-OD and 6" to 4" long sleeves.		SHEET 1 OF 1

WATER LEVEL					DRILLING START	DRILLING FINISH
TIME					TIME 8:25A	TIME 9:00A
DATE					DATE 12/27/84	DATE 12/27/84
CASING DEPTH						

Background OVM= 0.5

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0				
						1	SM	brown	Silty Sand	moist moderate loose Sand is fine grained, trace gravel.
						2				
		0.6				3	SP	lt. brown	Sand	moist, moderate dense to dense, clean to trace silt
GMB	18/17		3½'	4/6/7		4				
		0.7				5				
GMB	18/15		5½'	6/8/8		6				
						7				
						8				
						9				
		0.6				10				
GMB	18/15		10½'	11/17/22		11				TD= 11.5'
						12				
						13				
						4				
						5				
						6				
						7				
						8				
						9				
						0				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Ernie

DATE 12/27/84

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004972

JOB NO.	CLIENT	LOCATION
847025	Trenn Tube	Fullerton

DRILLING METHOD: Mobil 50 with 8" diameter hollow stem auger

BORING NO.: D-1

SHEET: 1 OF 1

SAMPLING METHOD: GM3: 18" drive sampler with 2"-OD and 6" to 4" long sleeves.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILLING	START	FINISH
TIME	3:00P	5:30P
DATE	12/27/84	12/27/84

LOCATION OF BORING

Background OVM = 1.2

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0				
						1	SP/SM	brown	Silty Sand	moist moderate dense sand is medium grained
						2				
		2.4				3				
GMB	18/15		3½'	4/6/9		4				
						5		lt. brown	Sand	moist, dense, sand is medium to coarse grained, trace fine pebble gravel, clean to trace silt
GMB	18/16		5½'	13/17/23		6	SP			
						7				
						8				
						9				grades dry
						10				
GM3	18/15		10½'	12/23/32		11				
						12				TD = 11.5'
						13				
						14				
						15				
						16				
						17				
						18				
						19				
						20				

motor malfunctioning

DRILLING CONTRACTOR: Pioneer

DRILLING FOREMAN: Frank

DATE: 12/27/84

FIELD ENGINEER: DDB

EDITED BY:

DATE:

IT CORPORATION

NGSC-DTSC004973

LOCATION OF BORING

JOB NO.	CLIENT	LOCATION
847025	Trent Tube	Fullerton

DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger

BORING NO. D-2

SHEET 1 OF 1

SAMPLING METHOD GMB = 18" drive sampler with 2"-OD and 6" to 4" long sleeves.

					DRILLING START	DRILLING FINISH
WATER LEVEL					TIME 11:45A	TIME 12:40P
TIME						
DATE					DATE 12/27/84	DATE 12/27/84
CASING DEPTH						

Background OVM = 0.4 - 0.5

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0	SM	brown	Silty Sand	moist, moderate loose, Sand is fine grained
						1				
						2	ML/SM	brown	Sandy Silt	moist to wet, soft, organics.
		89.4				3				
GMB	18/13	49.6	4'/3½'	4/5/7		4	SP/SM	brown	Sand	wet moderate loose to dense, some silt.
		26.8				5				
GMB	18/15		1'/5½'	13/15/17		6				at 4½'-5' bring making liquid.
						7				
						8				
						9	SP	lt. brown	Sand	dry to moist dense sand is medium to coarse grained
		2.9				10				
GMB	13/16		1'/10½'	13/17/23		11				
						12				TD = 11.5'
						13				
						4				
						5				
						6				
						7				
						8				
						9				
						0				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Ernie

DATE 12/27/84

DATE

FIELD ENGINEER DVE

EDITED BY

IT CORPORATION

NGSC-DTSC004974

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger		BORING NO. D-3
	SAMPLING METHOD GMB = 18" drive sampler with 2"-OD and 6" to 4" long sleeves.		SHEET 1 OF 1
Background OVM = 0.4-0.5	WATER LEVEL		DRILLING START TIME 9:50A; FINISH TIME 10:45A
	TIME		
	DATE		DATE 12/27/84; DATE 12/27/84
	CASING DEPTH		

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0				
						1	SM	brown	Silty Sand	moist, moderate loose
						2				
		0.7				3				
GMB	18/17		3½'	6/8/11		4	ML	black	Silt	moist, organics, limonite staining.
		2.2				5	SM	brown	Silty Sand	moist to wet, moderate dense, sand is fine to medium grained.
GMB	18/18		5½'	5/9/13		6				
						7	SP	lt. brown	Sand	moist, moderate dense to dense, sand is medium to coarse grained, trace fine pebble gravel, clean to trace silt.
						8				
						9				
		0.8				10				
GMB	18/17		10½'	10/19/27		11				
						12				TD = 11.5'
						13				
						14				
						15				
						16				
						17				
						18				
						19				
						20				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Ernie

DATE 12/27/84

DATE

FIELD ENGINEER DDB

EDITED BY

IT CORPORATION

NGSC-DTSC004975

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger		BORING NO. E-1
	SAMPLING METHOD GMB= 18" drive sampler with 2"-OD and 4" to 6" long sleeves.		SHEET 1 OF 1
	WATER LEVEL		DRILLING START TIME 3:40P / FINISH TIME 4:05P
	TIME		
	DATE		DATE 12/27/84 / DATE 12/27/84
	CASING DEPTH		

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and asphalt covered

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0	SM	brown	Silty Sand	moist, moderate dense
						1				
GMB	18/16		2'	4/7/10		2	ML	brown	Silt	moist, moderate firm, trace fine sand
						3	SP	lt. brown	Sand	dry to moist dense, sand is medium to coarse grained
GMB	18/16		4'	6/7/11		4				
						5				
						6				
						7				
						8				
GMB	18/17		9'	10/13/23		9				
						10				TD=10.0'
						11				
						12				
						3				
						4				
						5				
						6				
						7				
						8				
						9				
						0				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN E. Ruiz

DATE 12/27/84

DATE

FIELD ENGINEER DPB

EDITED BY

IT CORPORATION

NGSC-DTSC004976

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger		BORING NO. E-2
			SHEET 1 OF 1
	SAMPLING METHOD GMB = 18" drive sampler with 2"-OD and 4" to 6" long sleeves		DRILLING START TIME 8:25A / FINISH TIME 8:50A
	WATER LEVEL		
	TIME		
	DATE		DATE 12/29/94 / DATE 12/29/94
	CASING DEPTH		

Background OVM = 0.3

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0				
						1	SP	brown to dk brown	Sand	moist moderate dense to dense sand is medium to coarse grained clean to trace silt
GMB	18/16	0.4	2'	3/6/6		2				
						3				
GMB	18/16	0.4	4'	4/7/7		4				
						5				
						6				
GMB	18/15	0.7	6½'	7/11/12		7				TD = 7.5'
						8				
						9				
						0				
						1				
						2				
						3				
						4				
						5				
						6				
						7				
						8				
						9				
						0				

DRILLING CONTRACTOR Parker

DRILLING FOREMAN Ernie

DATE 12/29/94

FIELD ENGINEER DDE

EDITED BY

DATE

IT CORPORATION

NGSC-DTSC004977

LOCATION OF BORING	JOB NO. 847025	CLIENT Trent Tube	LOCATION Fullerton
	DRILLING METHOD Mobil 50 with 8" diameter hollow stem auger		BORING NO. E-3
			SHEET 1 OF 1
	SAMPLING METHOD GMB = 18" drive Sampler with 2"-OD and 6" to 4" long sleeves.		DRILLING START TIME 9:00 A; FINISH TIME 9:30 A
	WATER LEVEL / TIME / DATE / CASING DEPTH		DATE 12/28/84; DATE 12/29/84

Background OVM = 0.3

DATUM

SURFACE ELEVATION

SURFACE CONDITIONS: Flat and gravelled

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	OVM	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	USCS DESIGNATION	COLOR	SOIL TYPE	SECONDARY CHARACTERISTICS, CONSISTANCY AND REMARKS ON SOIL AND DRILLING
						0				
						1	SM	brown	Silty Sand	dry to moist moderate dense, sand is fine grained
GMB	18/16	0.7	2'	4/6/6		2				
						3	SP	H. brown	Sand	dry dense sand is fine to medium grained.
						4				
		0.5				5				
GMB	18/17		5½'	7/11/13		6				
						7				
						8				
GMB	18/17		9'	12/17/22		9				
						10				TD=10.0'
						11				
						12				
						13				
						14				
						15				
						16				
						17				
						18				
						19				
						20				

DRILLING CONTRACTOR Pioneer

DRILLING FOREMAN Ernie

DATE 12/28/84

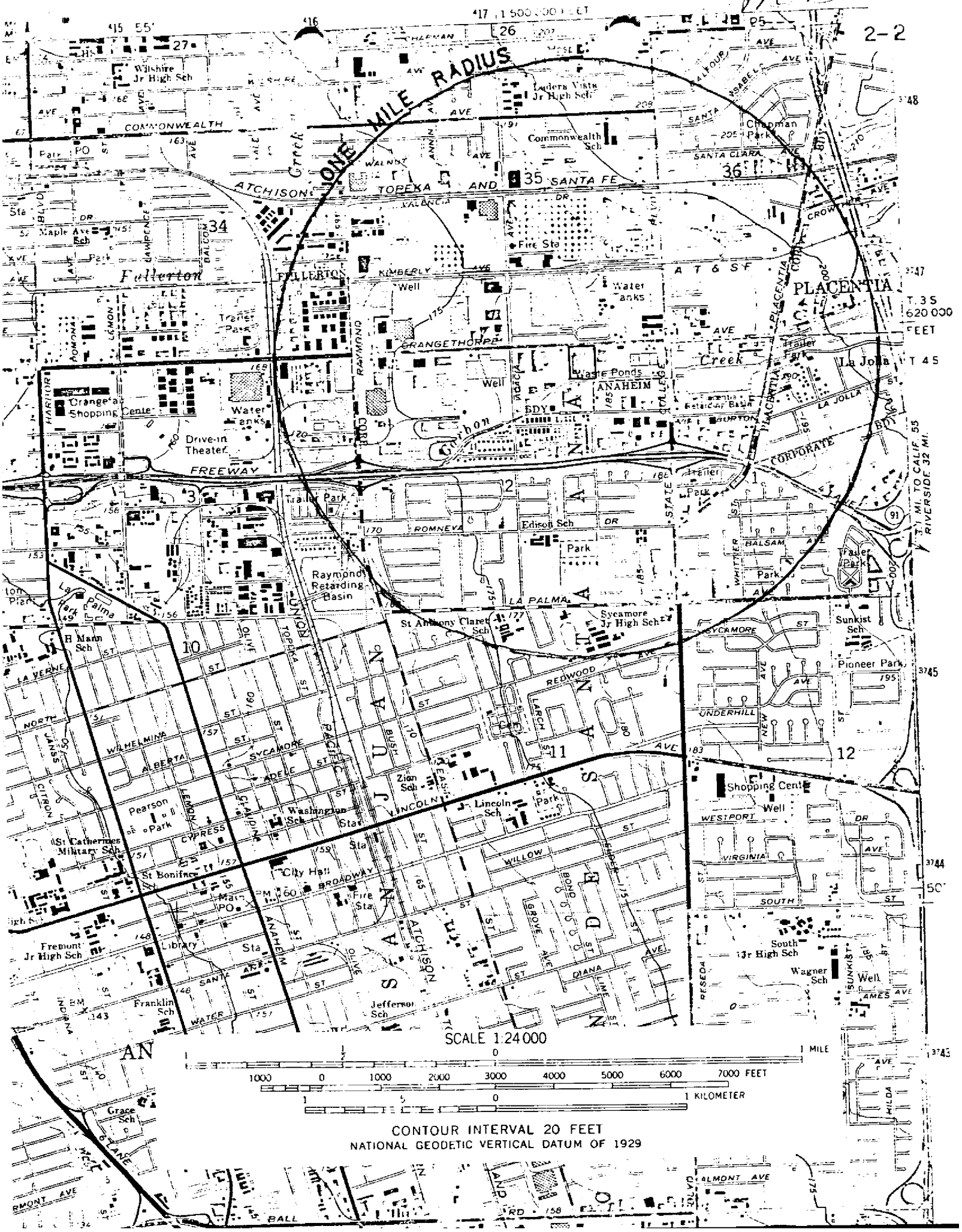
FIELD ENGINEER [illegible]

EDITED BY

DATE

IT CORPORATION

NGSC-DTSC004978



NGSC-DTSC004979

I FACILITY INFORMATION

1. Maps of Facility

   Topographic (1:2400 Scale)
   Topographic (1:2400 Scale)
   Wells, Surface Water & Aquducts
   Treatment & Storage Areas
   Topographic, Facility Only, Drainage
   Utility Lines

2. Photographs of Facility

3. Associated Information