6812 G-000-711 .119

OEPA DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE REPORT - TECHNICAL PROGRESS REPORT FOR JANUARY 1, 1995 THROUGH MARCH 31, 1995

04/19/95

DOE-0862-95
DOE-FN EPAS
150
REPORT

Department of Energy
Fernald Environmental Management Project
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155

APR 19 1995

DOE-0862-95

Mr. Thomas A. Winston, District Chief
Ohio Environmental Protection Agency
401 E. 5th St.
Dayton, Ohio 45402-2911

Dear Mr. Winston:

OHIO ENVIRONMENTAL PROTECTION AGENCY DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE REPORT - TECHNICAL PROGRESS REPORT FOR JANUARY 1, 1995 THROUGH MARCH 31, 1995

Enclosed is the Quarterly Technical Progress Report describing Fernald Environmental Management Project (FEMP) progress with respect to compliance with the Stipulated Amended Consent Decree and the Ohio Environmental Protection Agency (OEPA) Director's Findings and Orders.

In addition to this report, the following are enclosed:

- Revised Table C-4, which provides a list of all waste streams identified under the Stipulated Amended Consent Decree, as well as waste streams identified as a result of routine Resource Conservation and Recovery Act (RCRA) determinations.
- Copies of Soil Boring Logs for this reporting period.

If you have any questions, please contact Ed Skintik at (513) 648-3151.

Sincerely,

Jack R. Craig
Director

FN:Skintik

Enclosures: As stated

Recycled and Recyclable

cc w/encs:

Administrative Record/FERMCO

cc w/encs (except boring logs):

J. M. Owendoff, EM-40/FORS
K. A. Chaney, EM-424/QO
J. Van Kley, Ohio AGO
J. S. Rogers, DOJ
P. Harris, OEPA-Dayton
G. E. Mitchell, OEPA-Dayton
P. Pardi, OEPA-Dayton
J. A. Saric, USEPA-V
N. W. Alhadeff, FERMCO/81-1
L. M. Clauss, FERMCO/80-1
J. W. Thiesing, FERMCO/2
R. L. Glenn, Parsons

OHIO ENVIRONMENTAL PROTECTION AGENCY
DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE
QUARTERLY TECHNICAL PROGRESS REPORT

January 1, 1995 - March 31, 1995

Introduction

Section 4.13 of the Stipulated Amended Consent Decree requires that beginning October 20, 1990, and continuing on the twentieth day of every third month thereafter, DOE shall submit a quarterly technical progress report to Ohio EPA. In accordance with this section, the option of combining this report with ongoing reports being submitted pursuant to the Director's Findings and Orders issued June 4, 1987, is exercised.

This report describes activities at the Fernald Environmental Management Project (FEMP) from January 1, 1995 through March 31, 1995, and status as of March 31, 1995. The report contains two sections. Section I addresses outstanding commitments contained within the Stipulated Amended Consent Decree. Section II pertains to compliance with Section IV of the Consent Decree, and incorporates remaining outstanding items from the Ohio EPA Director's Findings and Orders that have not been addressed within the Consent Decree.

OHIO ENVIRONMENTAL PROTECTION AGENCY
DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE
QUARTERLY TECHNICAL PROGRESS REPORT

January 1, 1995 - March 31, 1995

Section I - Stipulated Amended Consent Decree

Section	Activity	Status
3.5.1.(D)(I)	Submit report on results and analysis for remaining drums identified under the Stipulated Amended Consent Decree by September 30, 1992.	**COMPLETE**. Sampling and analysis report was submitted to the Ohio EPA on September 25, 1992.
3.8(B)	Daily/weekly inspection of Plant 1 Pad.	**ONGOING**. Inspections are performed as required to meet the proposed requirements.
3.11	Report all Hazardous Waste Management Units (HWMU).	**ONGOING**. On February 14, 1995, Ohio EPA concurred with DOE's request to reclassify the Biosurge Lagoon from a HWMU to a Solid Waste Management Unit (SWMU). On March 27, 1995, Ohio EPA concurred with DOE's request to reclassify the Wheelabrator Shotblaster from a HWMU to a SWMU. On February 14, 1995, Ohio EPA requested the consumption records (for materials processed) for the Primary Calciner. Ohio EPA will review the records prior to determining DOE's reclassification request on the unit. The Hilco Oil Recovery System reclassification effort continues to date. Once all the necessary information pertaining to the unit is obtained, a reclassification request letter will be submitted to Ohio EPA.

OHIO ENVIRONMENTAL PROTECTION AGENCY
DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE
QUARTERLY TECHNICAL PROGRESS REPORT

January 1, 1995 - March 31, 1995

Section II - Consent Decree

Section	Activity	Due Date	Status
4.9	Perform cleanout of SWRB (when approximately 150,000 gallons of sediment is accumulated) at 24-month intervals on maintenance schedules approved in the SWRB PTI.		AS REQUIRED. The SWRB west chamber was inspected in July 1993 and several leaks in the liner were noted. The integrity of the entire liner system is not in jeopardy. As part of the Federal Atomic Trades and Labor Council (FATLC) agreement, the solids removal and liner repair were completed by the existing FEMP labor force. The solids were transported to Plant 8 via the FEMP "Super Sucker" vacuum truck. Use of the new line constructed for the SPIT Project, as previously reported in the Quarterly Report, proved to be less efficient. The solids were stored in dedicated tankage and processed through the existing EIMCO vacuum filter. All drums of solids from the cleanout have been shipped to NTS. Repair of the last few leaks (holes) in the liner were completed during the first week of July 1994. Re-evaluation of the leak detection system continues. The East basin continues to show no indication of leaking. The sediment level in the East basin has been revised from the mid-March 1994 indication of a maximum 6-inch depth and average depth of 4-inches. The revised readings based on actual grid measurements indicate an average depth of 2-3/4 inches over the bottom of the basin (Nominally 190' x 190'). This equates to approximately 62,000 gallons of sediment accumulation. Prepared a Rough Order of Magnitude (ROM) estimate for sludge removal equipment at the SWRB and the BSL for consideration for capital funding.

OHIO ENVIRONMENTAL PROTECTION AGENCY
DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE
QUARTERLY TECHNICAL PROGRESS REPORT

January 1, 1995 - March 31, 1995

Section	Activity	Due Date	Status
4.9	Perform cleanout of BSL (when approximately 500,000 gallons of sediment is accumulated, but no more than once per year, as stated in the BSL PTI).	7/30/95	AS REQUIRED. The lagoon was evaluated for cleanout in July 1994. The volume of sediment was below the level requiring cleanout. The next survey is scheduled for July 1995.
4.11(A)	Implement a Best Management Practices (BMP) Plan after approval by Ohio EPA for control of wastes that may be discharged from the FEMP.	4/18/88	ONGOING. The Ohio EPA approved the BMP Plan on 7/10/89. Documentation for required actions is being reviewed to assure that all requirements of the plan have been satisfied. Follow-up actions are being identified based on this review.
4.11(B) DFO11	Maintain BMP Plan.		ONGOING. See previous item.
4.11(C)	Amend BMP whenever there is a change in the facility which has the potential to affect the discharging of waste.		AS REQUIRED. No amendments were required during the reporting period. The BMP committee has reviewed the plan to determine what modifications are needed. A comprehensive revision of the BMP Plan is presently in preparation. Issue of this revision to the Ohio EPA for approval is anticipated during CY1995.
4.11(D) DFO 13	If requested by Ohio EPA, modify the BMP Plan within 45 days.		AS REQUIRED. No requests for modifications were received during the reporting period.

000006

OHIO ENVIRONMENTAL PROTECTION AGENCY
DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE
QUARTERLY TECHNICAL PROGRESS REPORT

January 1, 1995 - March 31, 1995

Section	Activity	Due Date	Status
4.12	Modify the Zone of Influence Study Report within 30 days of Ohio EPA request.		**AS REQUIRED**. No requests for changes and/or additions to the report were received during the reporting period.
(DFO) 14(A)	Study the integrity of the FEMP outfall.		**COMPLETED**. A new effluent/outfall line was installed as part of Removal Action 3 - South Groundwater Contamination Plume. This task was identified as part of the work plan for Part 2 of the South Plume Removal Action submitted to the Ohio EPA. The new outfall line was designed to handle future FEMP remediation flows. The line was placed into operation on May 1, 1993. The existing line was subsequently removed from service and will be remediated in the future. Investigation of past possible leakage of the original outfall line was completed as a work plan addendum for Operable Unit 5 and results incorporated in the OU5 RI report.
4.14	Comply with any permits issued to DOE pursuant to ORC 6111.03 (J) with regard to sewage, industrial wastes or other wastes, and to comply with OAC 3745-31-02 and any permits issued pursuant to OAC 3745-31-02.		**ONGOING**. Compliance with issued permits is ongoing. No exceedances of the discharge limits specified by the NPDES permit occurred during this reporting period.

OHIO ENVIRONMENTAL PROTECTION AGENCY
DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE
QUARTERLY TECHNICAL PROGRESS REPORT

January 1, 1995 - March 31, 1995

1994 RCRA ANNUAL REPORT

The 1994 RCRA Annual Report was submitted to Ohio EPA on February 23, 1995. There is no update at this time.

OHIO ENVIRONMENTAL PROTECTION AGENCY
DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE
QUARTERLY TECHNICAL PROGRESS REPORT

January 1, 1995 - March 31, 1995

TABLE C-4

RCRA REGULATED HAZARDOUS WASTE STREAMS

TABLE C-4

RCRA REGULATED HAZARDOUS WASTE STREAMS

4/4/95

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
12	16	AEROSOL PAINT CANS	D001	PK
46	4	BARIUM CHLORIDE LIQUID HEAT 980	D005	PK
47	4	BARIUM CHLORIDE (LIQUID HEAT 800)	D005	PK
89	9	BORING #1412	F002	PK
119	2	BARIUM CHLORIDE SOLUTION	D005	PK
157	16	WD-40 SPRAY CAN	D001	MSDS
160	16	SPEED E NAMEL SPRAY PAINT	D001	MSDS
162	16	KRYLON CAR COLOR SPRAY PAINT	D001	MSDS
163	16	AEROSOL PAINT	D001	MSDS
177	6	RAGS, GLOVES, PROTECTIVE COVERALLS, DOP, FORMULA 401	U107	MSDS
180	6	RAGS SOLVENT	F002	PK,8
183	99	WATER\GAS MIXTURE TANK #8	D001 D018 D035	1,4,7,8,9
201	1	CRANKCASE OIL	D018	PK,MSDS
344	2	ITEK DEVELOPER (LIQUID)	D011	MSDS
345	1	KEROSENE FROM ABANDONED UNDERGROUND STORAGE TANKS 11 & 13	D001 D018	PK,MSDS,1,3,8,9
358	2	CAUSTIC SOLUTION (NaOH) FROM PLANT 8 RAFFINATE PROCESSING	D002 D019	PK,1,3,5,7,8,9
376	8	OILY RAGS, ABSORBENT PADS	F002	PK,1,3,5,9
379	1	SPENT 1,1,1-TRICHLOROETHANE	D008 D018 F001 F002	PK,MSDS
380	8	ABSORBENT PADS, RAGS AND GLOVES	D039 F002 F003	PK,1,3,5,6,9
381	16	AEROSOL PAINT CANS	D001	MSDS
383	2	X-RAY FIXER & DEVELOPER, CLEAR LIQUID MODERATE ACIDIC SOLUTION	D011	MSDS
385	1	SPENT SOLVENTS	D018 F001 F002	PK,MSDS,7,8
386	1	FLOOR SUMP CLEANOUT SLUDGE	D019 D039 F001 F002	PK,1,3,7,8
387	8	OIL SOAKED RAGS	D010 D018 F002	PK,MSDS
389	7	OILY RAGS FROM WATER TREATMENT AREA	D008 D009 D010	PK,1,3,5,9
390	3	OILY SLUDGES FROM OIL COALESCING SYSTEM: PLT 6 WWTS	D005 D008	PK,1,4,7,8,9
391	16	WASTE AEROSOL PAINT CANS	D001	MSDS
392	20	DRY CELL ELECTRONIC STORAGE BATTERIES	D002 D006 D009	PK
393	1	LUBRICATING OIL FROM REDUCTION REMELT.	D008	1,3,8,9
395	1	PAINT THINNERS AND PAINT RESIDUES	D001 F002 F003 F005	PK
396	6	PAINT THINNER RAGS	F002 F003 F005	PK
398	8	NON-RECOVERABLE TRASH CONTAMINATED ABSORBANT PADS	D008 D009 F001	PK,MSDS,1,3,5,9
399	8	OILY RAGS, PADS AND TRASH FROM BOILER PLANT MACHINERY	D008 D039 F001	PK,1,3,5,9
400	1	USED OIL FROM MAINTENANCE	D001 D008 F001	PK,MSDS,1,4,8,9
403	6	1,1,1,-TRICHLOROETHANE RAGS	D018 F001 F002	PK
404	8	OILY RAGS	D008 D018 F002	PK
405	20	DRY CELL BATTERIES	D002 D009	PK

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000010

6812

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
406	16	AEROSOL CANS	D001	MSDS
408	1	USED OIL FROM GEAR BOXES, LATHES, AND MOTORS	D005 D006 D008 F001	PK,1,3,7,8,9
410	8	OILY RAGS	F001 F002	PK,1,3,5,9
412	1	1,1,1-TRICHLOROETHANE	D001 D006 F001 F002	PK,MSDS,1,3,8,9
413	8	SPENT SOLVENT CONTAMINATED RAGS	D008 D039 F002	PK,1,3,5,9
414	1	USED OIL	D001 D006 D008 D009 D039 F001 F002	PK,1,3,8,9
415	8	OILY RAGS AND ABSORBENTS WD-40 AND VARIOUS OILS	D008 D018 F002	PK
416	1	CHLOROFORM	D022	PK
418	1	USED ACETONE AND WATER	D001	PK,MSDS
419	1	XYLENE	D001	PK,MSDS
421	1	METHANOL	D001 F003	PK,MSDS
423	17	ELEMENTAL MERCURY	D009	MSDS
425	1	DIGESTION WASTE (ANL-3002: NITRIC AND CYCLOHEXANE)	D001 D004 D005 D006 D007 D008 D010 D011	PK,MSDS
426	1	METHANOL AND CYCLOHEXANE MIXTURE	D001	PK
427	20	NICKEL-CADMIUM BATTERIES	D002 D006	PK
428	1	ACETONITRILE IN WATER	D001	PK,MSDS
429	20	HG BATTERIES	D002 D009	PK
432	7	MERCURY THERMOMETER SPILL CLEAN-UP MATERIALS FROM LAB	D006 D008 D009	PK,MSDS,4,5,9
433	16	AEROSOL SPRAY CANS PROPELLANT	D001	MSDS
434	8	SOLIDS CONTAMINATED BY LAB SAMPLES & MATERIALS	D004 D005 D006 D007 D008 D022 F002 F003	PK
435	1	PAINT HYPALON COATING	D001	PK,MSDS
436	1	SEALANT POLYCHLOROPENE SOLUTION	D001	PK,MSDS
438	1	HYDRAULIC OIL FROM BALER IN DRUM RECONDITIONING	D018	PK,1,3,4,7,8,9
455	1	UNLABLED DRUM CONTAINING 1,1,1 TRICLOROETHANE.	D001 F001	PK,MSDS,1,3,7,8,9
456	3	SOLVENT WASTES STORED ON PLANT 1 PAD	D007 D039 D040 F001 F002	PK,1,3,4,7,8,9
459	1	PAINT	D001 F001 F002	PK,1,4,8,9
460	8	LIQUID & SOLID WASTE SAMPLES	D004 D005 D006 D007 D008 D010 D018 F002	PK,1,3,7,8,9
468	1	OIL AND SOLVENTS W/ ANALYSIS	D001 D007 D008 D010 D018 F002	PK,1,3,7,8,9
473	6	ANTI-C PAPER COVERALLS & BOOTIES W/ LIME SLURRY	F001 F005	PK
476	13	LAB PACKED WATER AND RESIDUE SAMPLES	D007	PK,2,4
479	1	USED PAINT THINNER	D001 D008 D009 D035 F003 F005	PK,1,3,8,9
480	1	USED OIL	D018 F002	PK,1,3,7,9
485	1	KEROSENE	D001	PK,MSDS,1,3,7,8,9
486	6	TETRACHLOROETHYLENE SPILL CLEANUP	U210	PK
487	2	RAIN WATER FROM UST #8 FORMERLY STORING GASOLINE	D008 D018	PK
507	1	CONTAMINATED SOLVENT GENERATED IN THE PILOT PLANT. (MEK)	D001 D035	PK,MSDS,1,3,7,8,9
508	1	UNUSED PAINT THINNER	D001 D035	PK,1,4,7,8,9
514	1	PAINT WASTE FROM PAINTING BOOTH	D001 D007 D008 F002 F003 F005	PK,1,4,7,8,9
517	6	OIL DRY CONTAMINATED WITH OIL FROM BALER	D007 D008	PK,1,3,4,6,7,8,9
520	1	PETROLEUM PRODUCT WITH RAIN WATER	D018	PK,MSDS
524	1	IGNITIBLE LIQUID, UNKNOWN ORIGIN	D001	1,4,7,8,9

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000011

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
526	9	CONTAMINATED SOIL FROM PIT 5 HWMU AREA	F001 F002	PK,1,4,6,9
533	1	PAINT: GRAY EPOXY	D001 D006	PK,1,3,8,9
534	1	MEK MARKED ON DRUM BLUEDRUM FLAMMABLE	U159	PK,MSDS
538	10	BORING # 1508	F002 F005	PK
547	18	MISCELLANEOUS LEAD TOOLS PIPING, ETC...	D008	PK
548	18	LEAD - COUNTERWEIGHTS, BEARINGS	D008	PK
584	1	KEROSENE (DIESEL FUEL)/SLUDGE/WATER FROM UST #3	D001 D018	PK,MSDS
585	16	ZINC COMPOUND (AEROSOL)	D001	MSDS
587	1	GREASE AND WATER	D001	1,3,7,8,9
627	8	5-GAL CAN W/ SPILL CLEANOUT MATERIAL	F001	5
628	8	SPILL CLEAN-UP MATERIALS	F001	PK
633	1	OIL FROM UNKNOWN GENERATION SOURCE	D007 D008 D009	PK,1,3,4,7,8,9
634	99	BUFFERED KCN SOLUTION (ABOUT 2 LITERS @ 30 G PER LITER)	P098	PK
635	7	MERCURY SPILL CLEAN-UP AND SPENT MERCURY BATTERIES	D009	PK
638	1	USED OIL	D018	PK
644	8	TRASH, PADS, RAGS, WATER	D008 D010	PK,1,3,5,7,8,9
659	99	LEAD AND WOOD SHAVINGS - UNKNOWN ORIGIN	D008	PK
661	10	BORING # 1594 - FROM NORTHWEST CORNER BLDG. 12	F001	PK,2,4,9,12
675	16	NON-EMPTY AEROSOL CANS, BUILDING 11	D001	MSDS
677	16	NON-EMPTY AEROSOL CANS, BUILDING 12	D001	MSDS
696	2	KODAK ROYALPRINT ACTIVATOR	D002	PK,MSDS
697	2	ROYALPRINT STOP BATH	D002	PK,MSDS
700	14	MAGNESIUM FLAKE AND OILY RAGS	D003	PK
720	10	BORING #1261	F001	PK,2,4,9,12
742	4	OILY SLUDGE	D018 D019 D021 D028 D039 D040 D043	PK,1,2,3,4,6,8,9
743	9	CONTAINER OF PUMP OIL AND RAGS	F001	PK
757	10	BROWN PARTICULATE SOLID (DIRT AND RUBBLE)	D004 D007 D008 D010 D011	PK,1,4,9,11
768	1	DAAP/SOLVESSO MIXTURE	D001	PK,1,4,8
769	3	PAINT	D001	MSDS
772	7	RESPIRATOR CANISTER	D007 D011	MSDS
776	10	BORING #1674, LOCATED INSIDE PILOT PLT ON NORTHWEST SIDE OF	F001	PK,2,4,9,12
777	1	USED AGITENE	D001 D008 F001 F002	PK,MSDS,1,4,7,8,9
817	6	PAINT CHIPS FROM SAND FILTERS AT WATER PLANT	D008	PK
818	1	OIL AND WATER FROM DRUM DECON. PAD	D001 D008	PK,1,3,7,8,9
819	10	BORING #1251	F001	PK,2,4,9,11,12
820	20	LEAD ACID BATTERIES	D002 D004 D008	MSDS
826	13	METHYL ISOBUTYL KETONE, LABPACKED	D001 U161	PK
827	13	SODIUM AMIDE, STABILIZED AND LABPACKED	D003	PK
828	13	1,4-DIOXANE, STABILIZED, LABPACKED	D001 U108	PK
844	2	URANYL NITRATE SOLUTION (TANKS/DRUMS)	D002 D005 D007	PK
850	1	PAINT WASTE FROM TANK FARM	D001 D035 F002 F003	PK,1,3,4,7,8,9

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000012

6812

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
854	20	NI CD BATTERIES	D006	MSDS
855	20	MERCURY BATTERY	D009	MSDS
868	3	OILY WASTE AND SOLIDS, POSSIBLY FROM DRUM RECONDITIONING	D039	PK,1,3,4,7,8,9
870	1	VARNISH - UNUSED	D001	MSDS
873	2	SPENT FIXER	D011	MSDS
874	7	LEAD BRICKS, LEAD WINDOW SASHINGS, BABBIT HAMMER	D008	PK
876	7	METAL FRAMES FROM HEPA FILTERS	D006	PK
1058	2	DECANT WATER FROM NPR/AAF PRIMARY SEPARATOR	D001 D009	PK,1,3,7,8,9
1080	7	CADMIUM SPRINGS	D006	4
1081	7	CADMIUM SPRINGS	D006	PK
1178	2	GROUNDWATER FROM WELL #2649	D007 F002	PK,2,4,7,9
1182	1	CLEAR DISPERSANT,TYPE (H) PREMIX-BLACK,CYAN,YELLOW & MAGENTA	D001	MSDS
1183	1	CLEAR DISPERSANT, TYPE (H) PREMIX, TYPE (H) CONCENTRATE	D001	MSDS
1184	1	CLEAR DISPERSANT, TYPE (H) PREMIX, TYPE (H) CONCENTRATE	D001	MSDS
1185	2	TYPE 028 FIX; CD-5 DEVELOPER	D011	MSDS
1187	3	SPENT ACTIVATED CARBON, FROM PERCHED WATER PROJECT	D040	PK,MSDS
1199	7	MERCURY CONTAMINATED FLOOR TILE & PIPE INSULATION	D009	PK,MSDS
1229	2	CONTAMINATED SUMP WATER	D008 D009 D039	PK,1,2,4,7,8,9,11,12,13
1251	1	FREON 11	U121	PK,MSDS,5
1271	7	LEAD SOLDER JOINTS	D008	PK
1272	4	MERCURY CONTAMINATED MATERIALS FROM SINK TRAPS IN LAB	D007 D008 D009	PK,1,4,7,8,9,13
1273	2	CONTAMINATED WATER	D007 D008 D009	PK,1,3,7,8,9
1279	2	PLUTONIUM 239 SOLUTION	D002	PK
1281	7	LEAD BRICKS	D008	PK
1297	2	PC 49896 ITEK UNIVERSAL DEVELOPER	D011	MSDS,4
1298	2	ITEK PC 49907 ITEK INSTACOLOR ACTIVATOR	D002 D011	MSDS,4
1306	10	SPILL CLEAN-UP FROM K-65 AREA.	D001 D008	PK,1,3,5,7,8,9
1337	1	UNSPECIFIED IGNITIBLE LIQUID	D001	1,3,7,8,9
1363	3	OILY SLUDGES FROM WWTS AREA	D005 D006 D007 D008 D009	PK,1,4,5,7,8,9
1380	4	NON OILY SUMP CLEANOUT MATERIAL FROM PLANT 8 OPERATIONS	D007 D008	PK,1,3,4,5,7,8,9
1389	4	SCRAP U308 FROM OXIDATION FURNACE #1	F002	PK,1,4,5,9
1404	11	EXCAVATED SOIL FROM SPILL UNDER BLDG 64 LATHES	D008	PK,MSDS,1,4,5,9
1405	4	CLEANING AND WASH BATH WASTE FROM DECON. PAD	D008	PK,MSDS,1,3,7,8,9
1411	1	CONTAMINATED SOLVENT FROM PAINT SHOP	D001 D005 D007 D008 D009 D010 D011 D018 D019 D035 F002 F003 F005	PK,1,3,6,7,8,9
1414	1	OIL AND FUEL FROM GARAGE AREA	D001 D008	PK,1,3,8,9
1415	1	CONTAMINATED INSOLUBLE OIL	D001 F001 F002	PK,1,3,7,8,9
1421	8	OILY RAGS, PADS, GLOVES AND PLASTIC WITH GREASE	D008	PK,1,4,6,9
1423	1	CONTAMINATED INSOLUBLE OIL	D008 D009 D039 D040 F001 F002 F003 F005	PK,1,3,7,8,9
1425	8	CONTAMINATED RAGS PAPER POLYETHYLENE FROM RMI	D005 F001	PK,1,4,5,9
1427	8	MOP HEADS AND PADS CONTAMINATED WITH 1,1,1 - TRICHLOROETHANE	F002	PK,1,4,5,9
1428	8	SPILL CLEANUP MATERIAL FROM BLDG 79 RCRA STORAGE PAD	F001 F002	PK

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000013

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
1429	1	CONTAMINATED ORGANIC CHEMICAL SOLVENT	D001 D008 D018 D028 D035	PK,1,3,7,8,9
1430	8	PLASTIC SHEETING, GLOVES, FLOOR SWEEPINGS	D010	PK,1,3,4,5,7,8,9
1432	1	NON CHLORIDE CONTAMINATED SUMP LIQUOR (KEROSENE)	D001	1,3,7,8,9
1438	3	NON-OILY CLEANOUT SLUDGES FOR ROASTING	D039	PK,1,3,4,7,8,9
1447	1	SUMP WASTE FROM PLT 1 PAINTING BOOTH	D001 D008 F003 F005	PK,1,3,7,8,9
1462	2	CONTAMINATED WATER FROM CHEMICAL PIT #2 SURFACE CAP	D002	PK,1,3,7,8,9
1501	7	SPILL CLEANUPS OF OIL AND GAS FROM GASOLINE ENGINES	D018	MSDS
1504	3	FLAMMABLE PAINTS AND PAINT RELATED PRODUCTS	D001	MSDS
1536	2	RAINWATER FROM WASTE PIT AREA	F001 F002	PK
1537	7	FILTER MATERIAL - SAND, GRAVEL, FLYASH	F001 F002	PK
1550	14	URANIUM HEXAFLUORIDE AND URANIUM TETRAFLUORIDE	D003	MSDS
1575	2	URANYL NITRATE (UNH)	D001	PK
1585	20	LEAD ACID BATTERY (BROKEN)	D002 D008	MSDS
1589	4	RAFFINATES - NON-NEUTRALIZED	D001 D002	MSDS
1613	2	123 PROCESSOR CLEANER	D002	MSDS
1617	8	CONTAMINATED PPE, PLASTIC, TRASH (CONTACT WASTE)	F001 F003 F005	PK
1620	3	VEGITATION FROM THE ETF CLOSURE	F001 F002	PK
1621	2	HYDROCHLORIC ACID	D002 D006 D007 D008	PK,4,7
1622	2	NITRIC ACID	D002 D006 D007 D008	4,9
1665	1	ELECTROSTATIC MASTER LIQUID DEVELOPER	D001	MSDS
1667	1	ISOPROPYL ALCOHOL	D001	MSDS
1691	2	HYDROFLUORIC ACID	D002	PK,MSDS
1692	2	NITRIC ACID	D002 D007	PK,MSDS
1694	2	QC WATER BLANKS	D006 D009 D010 D011 D018 D039 D040	PK,1,3
1705	1	LAB GENERATED WASTE, OIL FROM TCLP EXTRACTS	D001 D004 D006 D008 D010	1,3,7,8,9,11
1706	1	LAB WASTE, TCLP EXTRACT	D018 D021 D035 D038 D039 D040 D043 F002 F005	PK,1,4,7,8,9
1707	2	LAB GENERATED WASTE, ACID DIGESTATES	D002 D007 D008 D019 D028 D039 F001 F002	PK,2,4,7,8,9,11,12
1709	1	LAB GENERATED WASTE FLAMMABLE ORGANIC EXTRACTS	D001 D002	PK,2,4,7,8,9
1710	1	ORGANIC LIQUID WASTE	D001 D010 F002	PK,1,3,7,8,11,12
1711	2	METALS EXTRACTS AND DIGESTS	D002 D008 D009 D010 F001 F002 F005	PK,1,3,7,8,11,12
1712	2	DIGEST FROM MERCURY LAB WASTE	D002 D008 D010	1,3,7,8,11,12
1713	1	OIL FROM TCLP EXTRACTS	D040 F001 F002 F005	PK,1,3,8,11,12
1714	7	VOLATILE SOLID WASTE	D010	2,4,11,12
1715	7	CONTACT WASTE (LAB GENERATED WASTE)	D004 D008 D010 F001 F002 F005	2,4,7,11,12
1716	7	LAB GENERATED WASTE, CONTACT WASTE SOLID	F001 F002 F005	PK,1,4,11,12
1725	1	LUBRICATING OIL FROM GASOLINE ENGINES	D018	PK
1728	1	CRANKCASE OIL	D006 D008 D018	PK,MSDS,1,2,3,9
1729	1	LEADED GASOLINE	D001 D008 D018	PK,1,3,8,9
1731	18	LEAD	D008	PK
1737	2	HARDENER	D002	MSDS
1740	8	(DOP) DI OCTYL PHTHALATE	U107	PK

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000014

68 12

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
1751	2	SPENT FIXER	D011	MSDS
1764	1	MULTILITH BLANKROLA SOLVENT	D039	MSDS
1773	2	CONCENTRATE FIXER	D011	PK
1775	1	DEGLAZING SOLVENT	F002	PK,MSDS
1789	4	UNH	D004 D006 D007 D008 D010	PK,4,7,9,13
1799	1	USED MINERAL SPIRITS	D001 D018	MSDS
1815	6	SPENT FUELS	D001 D018	MSDS
1819	16	WHATMAN RAD-CON	D001	MSDS
1822	16	SPRAY ADHESIVE	D001	MSDS
1841	11	SOIL	F001 F002	PK,1,9,11
1842	9	GRASS ON THE SOIL	F001 F002	PK,1,9,11
1849	2	BUFFER SOLUTIONS PH 1 & 2	D002	MSDS
1856	1	SOLVENT CONTAINING MATERIAL, NON-SPECIFIC ORIGIN	F001 F002	PK,1,4,9
1895	7	PAINT BRUSHES WITH DRIED PAINT	D007 D008	PK
1904	16	CENOLLO E100 OVERNIGHT SPRAY	D001	MSDS
1906	7	HF TANK CLEAN-OUT MATERIAL	D007 U134	PK,MSDS,1,2,4,5,10
1922	18	LEAD SHIELDING FROM X-RAY SYSTEM	D008	PK
1927	2	METALS EXTRACTS AND DIGESTS (IGNITABLE)(LAB GENERATED WASTE)	D001 D002 D008 D009 D010 F001 F002 F003 F005	PK,1,3,7,8,11,12
1928	1	COMPUBLEND CLEANING LIQUID (IGNITIBLE)	D001	MSDS
1937	2	COMPUBLEND CLEANING LIQUID (CORROSIVE)	D002	MSDS
1938	1	LIQUID SOLVENT WASTE FROM PAINT BOOTH SUMP	D007 D008 D010 F005	PK,1,3,7,8,9
1946	10	SOIL CUTTINGS FROM OUTDOOR FIRING RANGE	D008	1,4,9,11
1949	1	DRAW TEMP 275	D001	PK,MSDS,5
1952	1	TBP & KEROSENE DAAP & SOLVESSO	D001 D008	1,4,8
1969	16	FLAMMABLE AEROSOLS	D001 D007 D008 D018 D019 D035 D039	MSDS
1973	1	ETHOXYETHANEL, MIBK, METHOXYETHONAL 1,4 DIOXANE, ETHYL ETHER	D001 U108 U117 U161 U213 U359	PK
1974	1	ANYDROUS ETHER, STABILIZED	D001 U117	PK
1975	6	PVC PIPING FROM PLT 6 PERCHED WATER EXTRACTION PROJECT	F001	PK,2,4,9,10,11,12
1987	18	LEAD & DEBRIS	D008	PK
1998	1	METHANOL AND CYCLOHEXANE	D001 F003	PK,MSDS
1999	2	NESSLER, REAGENT, COD DIGESTION SOLUTION ROCHELLE SALT	D002 D007 D009 D011	PK,MSDS
2006	1	CURING COMPOUND	D001	MSDS
2014	3	EPOXY-PRIME COAT LDC-1000	D001 D035	MSDS
2016	3	PAINT BITUMASTIC 300 M A & B COLD TAR COATING	D001 D018 D026	MSDS
2021	7	BARIUM CARBONATE	D005	MSDS
2024	1	PAINT	D005	MSDS
2036	1	SAVIN PRODUCT CODE 4537 T-D PAK 4522 SAVIN 765 DISPERSANT	D001	MSDS
2037	1	SAVIN PRODUCT CODE 4536	D001	MSDS
2048	5	SOLIDIFIED LAB WASTE	F001 F002 F005	PK
2053	2	SILVER THIOSULFATE	D011	PK,MSDS
2063	1	TEXO CORP. TEXOL-7	D001	MSDS

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000015

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
2064	1	DIVERSEY SUPER MUL SOLVENT CLEANER	D001	MSDS
2066	2	VESTAL DOUBLE BARREL CLEANER	D002	MSDS
2067	2	STATE ACIDINE ACID SCALE AND RUST REMOVER	D002	PK,MSDS
2068	2	STATE NO. 810 ALUMINUM BRIGHTENER	D002	MSDS
2069	7	SKC OXIDIZER TUBES	D007	PK,MSDS
2085	1	CHLORINATED SOLVENTS	D007 F001 F002	PK,MSDS
2090	7	VARIOUS AA LAMPS	D005 D006 D008	PK,4
2120	14	LITHIUM BATTERIES	D003	PK,MSDS
2210	2	HYDROGEN PEROXIDE SOLUTION	D001	PK,MSDS
2211	17	USED MERCURY FROM MISC. EQUIPMENT	D009	PK,MSDS
2224	1	FLOOR COATING BASE	D001	PK,MSDS
2235	1	LAB GENERATED WASTE ORGANIC LIQUID WASTE	D010 F002	PK,MSDS
2257	2	TCLP EXTRACTS LAB GENERATED WASTE	D002	PK,1,3,7,8
2259	2	TCLP LEACHATE	D009 F001 F002	PK,3,7,8
2362	2	RADIOACTIVE ACIDIC LAB WASTE FROM THE ANALYSIS OF SAMPLES	D002 D007 D008 D018 D035 D039 D040	PK,5
2363	2	RADIOACTIVE CAUSTIC LAB WASTE FROM THE ANALYSIS OF SAMPLES	D001 D002 D006 D008 D009 D018 D035 D038 D039 D040	PK,1,3,7,8,9,11
2364	2	RADIOACTIVE NEUTRAL LAB WASTE FROM THE ANALYSAS OF SAMPLES	D001 D006 D007 D008 D018 D035 D039 D040	PK,1,3,7,8,9,11
2395	7	CONTACT WASTE FROM CTC LAB	D007 D008 D009 D039 F001 F002 F005	PK,1,3,7,8,9,11
2401	6	CONTACT WASTE FROM PACD SAMPLING	F001 F002 F003 F005	PK
2402	2	WATER USED TO CLEAN SAMPLING EQUIPMENT	F001 F002 F005	PK
2403	1	DIRT, ROCKS, AND WOOD WITH LIQUID; UNKNOWN SOURCE	D001	PK
2409	1	USED DEXSIL PCB SCREENING KIT (LIQUID)	D002 D009	PK,1,3,4,5,7,8,9
2410	8	USED MILLIPORE PCB TEST KIT (LIQUID)	D002	PK,MSDS
2418	7	BROKEN GLASS AND OLD FLOURESCENT LIGHT BULBS	D009	PK,MSDS
2425	2	CTC CORROSIVE WASTE	D002 F001 F002 F005	PK,MSDS,5
2443	8	TRASH AND DEBRIS FROM UNKNOWN SOURCE	D006	PK
2465	1	CONTAMINATED WATER/SUMP LIQUOR FROM UNKNOWN SOURCE	D001 D007 D008 D010	PK,1,4,5,9
2483	7	HEPA FILTERS FROM MAWS - CHROMIUM CONTAMINATED	D007 D011	PK,1,3,7,8,9
2489	12	LAB PACK	PLCS	PK
2498	1	SUMP LIQUOR	D006 D012 D039 F002 F003	PK
2499	5	CONCRETE ABANDONED PILOT PLANT SUMP	F002 F003	PK,MSDS,1,3,7,8,9,12
2500	7	METAL TANK ABANDONED PILOT PLANT SUMP	F002 F003	PK,1,4,9,13
2501	9	SOILS ABANDONED PILOT PLANT SUMP	F002 F003	PK
2507	4	PILOT PLANT SUMP (HWMU) BOTTOMS/SEDIMENT	D007 D008 D009 D039 F002 F003	PK,1,3,4,12
2524	2	ALKALINE CONTAMINATED SUMP WATER FROM DECON. PAD	D002	PK,MSDS,1,4,9
2526	3	ANAEROBIC SEWEGE SLUDGE WASTEWATER TREATMENT FACILITY	F002	PK,1,3,4,7,8
2527	8	PAPER, PLASTIC, PPE (TYVEK, SARANEX) ABSORBENT PADS	F002 F003	PK
2530	1	MAGNAFLUX CLEANER	F002	PK
2547	8	GASOLINE/DIESEL FUEL FILTERS	D018	PK,MSDS
2554	2	ACID WASTE	D002	PK,MSDS
2556	1	ETHYL ACETATE	D001	PK
				PK,MSDS

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000016

68 12

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
2559	1	USED HEPTANE MIXTURE	D001	PK,MSDS
2578	12	LAB PACKS	PLCS	PK
2581	6	CONTAMINATED PALLETS	F002	PK,MSDS
2591	8	PADS ANTI-C'S & ABSORBANT CONTAMINATED WITH FORMIC ACID	U123	PK,MSDS
2594	2	THORIUM NITRATE SOLUTION	D002 D006 D007	PK,3,7,9,13
2599	12	LAB PACKS, NON-RAD CONTAMINATED	PLCS	PK,MSDS
2605	1	ACCUMULATED LIQUIDS FROM AEROSOL PUNCTURING FACILITY	D001	PK
2606	2	ACID DIGEST - ARSENIC	D002 D004 D038	PK,1,2,4,7,8,9,11,12
2607	2	ACID DIGEST-NO MERCURY	D002 D008 D018	PK,1,4,7,8,9,11,12
2611	2	DECONTAMINATION WASH/FLUSH WATER	D008 F001 F002	PK,1,3,10,11
2612	7	PPE/CONTACT WASTE FROM DETREX STILL CLOSURE	F001 F002	PK
2613	7	SCABBLED CONCRETE FROM DETREX STILL CLOSURE	F001 F002	PK,1,4,9,11,13
2614	8	SCRAP WOOD, STRAW, ASHES, TIRES, PLASTIC, SOOT, METAL & OTHER DEB	F002 F005	PK
2618	7	DETREX STILL TANK(INCLUDING ASBESTOS COVER), ASSOC. PIPING AND PU	F001 F002	PK
2620	2	WASTEWATER FROM FTF CLOSURE	F002 F005	PK,1,3,11
2621	7	SCRAP METAL CONTAMINATED WITH F-LISTED SOLVENTS (OPEN TOP TANK)	F002 F005	PK
2622	7	SCABBLED CONCRETE FROM FTF, CONTAMINATED WITH SOLVENTS	F002 F005	PK
2624	8	CONTACT WASTE CONTAMINATED WITH F-LISTED SOLVENTS	F002 F005	PK
2625	8	CONTACT WASTE CONTAMINATED WITH F-LISTED SOLVENTS AND PCB	F002 F005	PK
2626	3	SEDIMENTS/SLUDGES FROM OPEN TOP TANK AT FIRE TRAINING FAC.	D007 D008 D018 D029 D030 D032 D033 D040 F002 F005	PK,1,2,3,4,11
2627	1	NEGATIVE FILM HAND DEVELOPER	D001	PK,MSDS
2632	1	ELECTROSTATIC PLOTTER TONER	D001	PK,MSDS
2636	1	LIQUID IGNITABLES & COMBUSTABLES	F001 F002 F003 F005 U019 U211	PK
2640	7	ASPHALT/GRAVEL FROM FTF	F002 F005	PK
2655	1	ACID DIGEST WITH PYRIDINE	D002 D009 D038	PK,1,3,4,7,9,11
2656	2	METHYLENE CHLORIDE EXTRACTS	F002	PK
2657	8	METHYLENE CHLORIDE EXTRACTED SOLIDS	F002	PK
2668	8	MISC. SOLIDS FROM HWMU #26	D007 F001 F002	PK
2674	9	PETROLIUM CONTAMINATED SOIL FROM OPEN TOP TANK TRENCH	F002 F005	PK,1,4,9,10,11,12,13
2675	16	SMALL PROPANE CYLINDERS	D001	PK
2678	2	CAUSTIC WASTE	D002	PK
10002	7	SCRAP SALTS	D005 D008	1,4,9
10003	3	OILY OXIDATION SLUDGES WITH HIGH FREE METAL	D001 D039 F001	1,4,7,8,9
10004	1	CONTAMINATED SOLVENT - TRICHLOR, PERCHLOR	D007 D018 D019 D021 D029 D039 D040 F001	PK,1,4,7,8,9
10005	7	CONTAMINATED SOIL, ROCKS, BRICKS AND CERAMICS	D008	1,4,9
10006	1	CONTAMINATED OIL - INSOLUBLE	D008 D009 D039 F002 F003 F005	PK,1,2,4,7,8,9
10007	3	OILY SLUDGES	D007 F001	1,4,7,8,9
10009	3	SLUDGES - SOLVENT (TRICHLOR, PERCHLOR, ETC.)	D001 D008 D035 F005	1,4,7,8,9
10010	3	SLUDGES, OILY	D029 D039 D040 F001	PK,1,4,7,8,9
10011	8	CONTAMINATED BURNABLES	D005	PK,1,4,9
10012	8	CONTAMINATED BURNABLES	D029 D039 D040 F001	PK,1,4,9

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000017

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
10013	4	SUMP CAKE	D005 D007	1,4,9
10014	2	U-CONTAMINATED WATER	D039	1,4,9
10015	2	U-CONTAMINATED WATER FROM PILOT PLANT EXTRACTION AREA	D039	1,4,7,8,9
10016	3	OILY SLUDGE	D010 D035 F001	PK,1,4,7,8,9
10021	3	SLUDGES, OILY	D008 D018 D019 F002	PK,1,4,7,8,9
10022	4	GRIT BLAST	D008	4,9
10023	8	NON-RECOVERABLE TRASH	D008 F001	PK,1,3,10
10024	6	TRASH CONT. TO SOLVENT	D018 F001	PK,1,4,5,9
10025	7	CONTAMINATED SOIL AND ROCKS	D005	PK
10026	1	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D009 F001 F002	PK,2,4,7,8,9
10027	1	CONTAMINATED OIL, INSOLUBLE	D039 D040 F001	PK,MSDS,1,4,7,8,9
10028	3	SLUDGES, OILY	D008 D028	PK
10029	1	CONTAMINATED INSOLUBLE OIL	D006 D007 D008 D019 D029 D040 F001	PK,1,4,7,8,9
10030	1	CONTAMINATED SOLVENTS (METHANOL)	D001 F003	PK
10031	3	FLOOR SUMP CLEANOUT SLUDGE	D029 D039 F001	PK,1,4,7,8,9
10032	1	CONTAMINATED OIL, INSOLUBLE	F001	PK,2,4
10034	12	BENZENE (LABPACKED)	D001 D018 U019	PK
10035	12	CARBON TETRACHLORIDE (LABPACKED)	D019 U211	PK
10036	12	ETHYL ETHER (LABPACKED)	D001 U117	PK
20003	1	DEGREASING SOLVENT	D001 D019 D022 D028 D029 D035 D039 D040 F001 F003 F005	PK,1,2,9,11
20007	3	OIL CONTAMINATED WET SUMP OR FILTER CAKE	D011	1,4,7,8,9
20015	4	SCRAP SALTS AND FLOOR SWEEPINGS - LOW FLUORIDE	D007	PK,1,4,5,9
20021	1	CONTAMINATED INSOLUBLE OIL	D019 D029 D039 D040 F001	PK,1,2,4,7,8,9
20024	4	SCRAP SALTS AND FLOOR SWEEPINGS - HIGH FLUORIDE	D007 D008	1,4,9
20027	4	DUST COLLECTOR RESIDUES - HIGH FLUORIDE	D004 D011	2,4,9,11
20028	1	CONTAMINATED OIL - INSOLUBLE	D039 D040 F001	1,2,4,7,8,9
20031	1	CONTAMINATED OIL, INSOLUBLE GEAR OIL, LUBRICATING OIL	D008 D018 D019 D028 D029 D039 D040 F002	1,2,4,7,8,9
20033	4	DRY DUST COLLECTOR POWDER	D008	1,4,9,11
20035	4	DUST COLLECTOR RESIDUES - HIGH FLUORIDE	D007	4,9
20036	7	SCRAP SALTS AND FLOOR SWEEPINGS - LOW FLUORIDE	F001	PK,2,4,9,11
20037	3	PROCESS RESIDUES, TRAILER CAKES, SLURRIES, RAFFINATES	D029	2,4,9,11
20038	1	USED OIL FROM PILOT PLANT MAINTENANCE	D006 D008 D018 D019 D028 D029 F002	PK,1,2,4,7,8,9,11
20041	4	NON-METALLIC MISCELLANEOUS SAMPLES	D007	PK,4,7,8,9
20045	3	CONTAMINATED TBP AND/OR KEROSENE MIXTURES AND SLUDGES	D019 D022 D039 F002	PK,1,2,4,7,8,9,11
20046	4	NON-METALLIC MISCELLANEOUS SAMPLES	D007	3,9
20047	4	SCRAP SALTS AND FLOOR SWEEPINGS - LOW FLUORIDE	D004 D006	2,4,9,11
20048	3	PROCESS RESIDUES, TRAILER CAKES, SLURRIES, RAFFINATES	F005	PK,1,4,9
20054	1	CONTAMINATED SOLVENT - TRICHLOR, PERCHLOR	D019 D022 D028 D029 D039 F001 F005	PK,1,2,4,7,8,9
20055	1	CONTAMINATED OIL - INSOLUBLE	D029 D039 F002	PK,1,2,4,7,8,9,11
20058	4	DUST COLLECTOR RESIDUES - HIGH FLUORIDE	D006 D008	PK,4,9
20094	8	CONTAMINATED BURNABLES, RAGS, FILTER, CLOTH	D008 D011 F001	PK,1,4,7,8,9

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000018

6812

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
20095	8	RAGS CONTAMINATED, TETRACHLOROETHYLENE SILVER	D011 D039	PK,1,4,9
20107	8	GRIT-BLAST RESIDUE FROM LEAD PAINT REMOVAL ON EAST TOWER	D008	PK,1,4,5,9
20109	7	DUST COLLECTOR BAGS	D004 D006 D008	1,4,9
20120	7	DUST COLLECTOR BAGS	D007	4,9
20139	7	SAMPLES, NON-METALLIC	D005	1,4,7,8,9
20142	3	CONTAMINATED TBP-KEROSENE	D001 D019 D022 D039 F002 F003	PK,1,2,4,7,8,9,11
20143	8	NON-RECOVERABLE TRASH	D011	1,4,5,7,8,9
20145	4	DECANTED WATER FROM SUMP/FILTER CAKES	D002 D007	PK,1,3,4,7,8,9
30005	3	OILY SLUDGES	D001 D019 F002	PK,1,4,7,8,9
30010	3	WET SUMP OR FILTER CAKE - OIL CONTAMINATED	D039 D040 F002	PK,1,7,8,9
30018	3	WET SUMP OR FILTER CAKE - NON-OILY, NON-HALIDE	D039 F002	PK,1,4,7,9
30027	10	CONTAMINATED SOIL, ROCKS, BRICKS AND CERAMICS	D004 D005 D007 D008 D010 D011	1,2,4,5,7,8,9
30033	1	CONTAMINATED SOLVENT - TRICHLOR, PERCHLOR	D001 D039 F003 F005	PK,1,4,5,7,8,9
30034	1	OIL CONTAMINATED WITH SOLVENTS (TANK 5)	D018 F001	PK,2,4,7,8,9
30036	4	DUST COLLECTOR RESIDUES - HIGH FLUORIDE	D006 D008	1,4,9
30037	3	PROCESS RESIDUES, TRAILER CAKES, SLURRIES, RAFFINATES	F002	PK,1,4,9
30039	7	CONTAMINATED ROCKS, SOIL, ETC., WITH NO FREE LIQUIDS	D011	1,2,4,7,8,9
30042	3	WET SUMP OR FILTER CAKE - NON-OILY, NON-HALIDE	D039	PK,1,4,9
30045	3	OILY SLUDGES, HIGH FREE METAL	D001 D039 D040	1,4,7,8,9
30046	3	NON-OILY CLEANOUT SLUDGES FOR ROASTING	D019 F001	1,4,7,8,9
30047	4	SOLVENT SLUDGE, TRICHLOR, PERCHLOR, ETC...	D007 D011	1,4,9
30053	8	PROCESS RESIDUES, TRAILER CAKES, SLURRIES, RAFFINATES	D006 D007 D008 D018 D040 F002 F005	PK,1,4,9
30060	4	WET SUMP OR FILTER CAKE - NON-OILY, NON-HALIDE	D005	1,4,9
30074	8	CONTAMINATED NON-BURNABLES	F002	PK,1,4,5,9
30080	2	CONTAMINATED SOIL, ROCKS, DEBRIS, W/ FREE LIQUIDS 'CONTAINS FREE LI	D002 D004 D007 D008 D011	1,2,4,7,8,9
30081	3	DISCARD PROCESS RESIDUES, TRAILER CAKES, SLURRIES,RAFFINATES	D002	1,4,7,8,9
30082	8	CONTAMINATED NON-BURNABLES	D011	PK,1,4,5,9
30174	6	CONTAMINATED NON-BURNABLES	D004 D008 D011 F005	PK,1,4,5,6,9
40122	4	THORIUM TRAILER CAKES; WASTE SLURRIES	D002 D005 D009	1,3,8
40137	7	UNFIRED REDUCTION CHARGES PLUS CaF2	D001	PK,MSDS
40152	7	SCRAP THO2 -HIGH F	D005	4,5
40181	2	THORIUM NITRATE SOLUTION	D002 D007 D008	PK
40182	2	THORIUM NITRATE SOLUTION	D002 D007 D008	PK
40185	7	IMPURE THORIUM NITRATE (SOLID)	D001 D007 D008	PK
40186	7	IMPURE THORIUM NITRATE (SOLID)	D001 D007 D008	PK
40187	7	IMPURE THORIUM NITRATE (SOLID)	D001 D007 D008	PK
40188	7	IMPURE THORIUM NITRATE (SOLID)	D001 D007 D008	PK
40189	7	IMPURE THORIUM NITRATE (SOLID)	D001 D007 D008	PK
40192	4	THO2 POWDER REFINERY FEED	D008	PK,7
50002	6	NON-RECOVERABLE TRASH	D001	1,4,5,7,8,9
50008	3	SUMP CAKE - COPPER CONTAMINATED	D001	1,4,7,8,9

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000019

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
50010	1	NON-RECOVERABLE TRASH	F002 F005	PK,1,4,5,7,8,9
50014	8	NON-RECOVERABLE TRASH	D019	PK,1,4,5,7,8,9
50022	1	CONTAMINATED WATER	D001 F003	PK,1,4,7,8,9
50025	7	CONTAMINATED GRAPHITE	F001 F002	PK,9
50031	7	CONTAMINATED METALLIC FILTER ELEMENTS AND OIL	D008 D010	1,4,5,8,9
50036	8	CONTAMINATED BURNABLE	D007 F002	PK,1,4,9
50058	7	DUST COLLECTOR BAGS	D007	PK,1,4,9
50063	4	ROASTED MG F2/OTHER MATERIAL	D004 D008	4,9
50068	3	NON-OILY SLUDGE FOR ROASTING	D001	1,4,7,8,9
50070	3	NON-OILY SLUDGE FOR ROASTING	D008 F001 F002	PK,1,4,7,8,9
50071	3	SOLVENT SLUDGE	D001 D007	1,4,8,9
50072	1	CONTAMINATED SUMP WATER AND HYDRAULIC OIL	D001 D008 D019 D039 D040	PK,1,4,7,8,9
50085	3	WET CAKE, NON-OILY/HALIDE	D001 F002 F003 F005	PK,1,4,7,8,9
50089	4	MAGNESIUM POWDER AND TURNINGS	D001	PK,MSDS
50095	1	CONTAMINATED INSOLUBLE OIL	D007	1,4,7,8,9
50096	1	CONTAMINATED SOLVENTS FROM WATER TREATMENT	D001 D007	PK,1,4,5,7,8,9
50102	4	PROCESS RESIDUES, TRAILER CAKES, SLURRIES, RAFFINATES	D006 D008	1,4,9
50113	3	ROASTED CALCIUM-PRECIPITATED SUMP AND FILTER CAKES	F002	PK,1,4,9
50129	4	SCRAP U3O8 - LOW F	F002	PK,4,9
50131	4	SCRAP U3O8 - LOW F	F002	PK,9
50148	4	SCRAP U3O8 HIGH F	D004	1,4,6,7,8,9
50152	4	SCRAP U3O8 OR THO2, HIGH FLUORIDE	F002	PK,9
50154	4	ROASTED CALCIUM-PRECIPITATED SUMP OR FILTER CAKES	F002	PK,1,4,9
50165	4	ROASTED OFF-SITE SUMP CAKE	D007	4,9
50169	4	NON-OILY SLUDGE FOR ROASTING	D007	1,4,9
50170	4	SALT SLUDGE FOR PLANT 8	D004 D019 D039 F002	PK,1,4,9
50173	4	SALT SLUDGE, CHLORIDE	D007	1,4,7,8,9
50174	4	SALT SLUDGE, CHLORIDE	D007	PK,MSDS,4,6,7,8,9
50175	4	SALT SLUDGE,CHLORIDE	F002	PK,1,4,7,8,9
50177	4	FURNACE SALT,NON CHLORIDE	D001 D004 D008	4,7,8,9
50178	4	FURNACE SALT,NON-CHLORIDE	D001	4,7,8,9
50180	4	FURNACE SALT,NON-CHLORIDE	D007 D008 D010	1,4,9
50183	4	SCRAP SALTS,LOW F	F001	PK,1,4,9
50185	4	SCRAP SALT,HIGH F	D009	4,5,9
50197	4	SLUDGES FOR BLENDING	D007	1,2,6,7,8,9
50200	3	OILY SLUDGE FOR OXIDATION	D001 F001	1,4,7,8,9
50202	3	OILY SLUDGE FOR OXIDATION	D001 D010	1,4,7,8,9
50203	4	OILY SLUDGE FOR OXIDATION	D008	1,4,9
50204	3	OILY SLUDGE FOR OXIDATION	D001 D010	1,4,7,8,9
50293	4	U3O8 FOR REOXIDATION	D004	4,9
50339	3	SLUDGES, OILY, FOR OXIDATION, HIGH FREE METAL	F002	PK,1,4,7,8,9

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000020

68 12

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
50346	3	OILY SLUDGE FOR OXIDATION	D001	1,4,7 8,9
50347	3	DISCARD PROCESS RESIDUE	D001	1,4,7,8,9
50349	4	DUST COLLECTOR RESIDUES - HIGH FLORIDE	D008	PK,1,4,9
50351	4	DUST COLLECTOR RESIDUES-HIGH FLOURIDE	D004 D008	4,7,8,9
50355	3	DISCARD PROCESS RESIDUE	D001	1,4,7,8,9
50358	6	CONTAMINATED NON-BURNABLE	D001	1,4,5,7,8,9
50359	6	NON-RECOVERABLE TRASH	F002	PK,1,4,6,9
50361	7	NON-RECOVERABLE TRASH	D009	5
50364	4	U3O8, +8MESH, LOWF	D007 F001 F002	PK,4,5,9
50367	7	NON-RECOVERABLE TRASH	D008	PK,9
50387	4	SALT SLUDGE, CHLORIDE	D005	PK,4,9
50405	4	NON-RECOVERABLE TRASH	D006 D007	4,5,7,8,9
50406	4	FURNACE SALT, CHLORIDE	D004 D011	4,5,9
50407	6	NON-RECOVERABLE TRASH	D001	1,3,5,6,7,8,9
50408	4	FURNACE SALT NON-CHLORIDE	D006 D010	4,7,8,9
50412	3	NON-OILY SLUDGE FOR ROASTING	D008	PK,1,4,7,8,9
60008	8	NONRECOVERABLE TRASH	D008	PK,2,3,4,6,9
60013	1	OFF-SPEC. PAINT	D001	PK
60017	8	OILY RAGS AND CLOTHING	D039	PK,2,3,4,9
60039	1	CONTAMINATED SOLVENTS	D001 D018	PK,1,3,7,8,9
60040	1	SOLVENT MIXTURE; UNSPECIFIED ORIGIN	D001 D006 D035	PK,1,4,7,8,9
60042	1	CONTAMINATED SOLVENTS	D001 D006 D008 D009 D019 F002	PK,1,3,7,8,9
60044	1	CONTAMINATED SOLVENT MIXTURE, (TCA & CCL4)	D001 F001	PK,1,3,7,8,9
60046	1	SOLVENT MIXTURE WITH ABSORBENT PADS	D001 D018 D019 D021 D035 D039 D040	PK,1,3,7,8,9
60049	1	MIXED ORGANICS FROM BLDG 15 PROCESS DEVELOPMENT	D001 D004 D008 D010	PK,1,3,7,8,9
60051	1	SOLVENTS & FILTER MATERIAL	D039 F002	PK,1,2,3,4,6,7,8,9
60052	1	USED SOLVENT FROM GARAGE	D001 D007 D008 F002	PK,1,3,8,9
60055	1	LEADED GASOLINE FROM TANK # 12	D001 D008 D018	PK,MSDS,1,3,8,9
60056	1	USED CHLORINATED SOLVENT MIXTURE	D001 D007 D008 D009 D039 F002	PK,MSDS,1,3,7,8,9
60058	1	WASTE SOLVENT FROM BOILER PLANT	D001 D008 F002	PK,1,2,3,4,7,8,9
60059	1	USED 1,1,1 TRICHLOROETHANE MIXTURE	D001 D008 F002	PK,MSDS,1,3,8,9
60060	1	ORGANIC SOLVENT MIXTURE FROM PLANT 8 MAINTENANCE	D001 D008 D009 F002	PK,1,3,7,8,9
60062	1	CONTAMINATED INSOLUBLE OIL	D001 D008 D009 F002	PK,1,3,7,8,9
60064	1	SOLVENT CONTAMINATED OIL FROM PLANT 2/3	D001 D008 D035 F002	PK,1,3,7,8,9
60065	1	CONTAMINATED INSOLUBLE OIL	D001 D008 D019 F002	1,2,3,4,7,8,9
60066	1	USED OIL FROM PLANT 4 MAINTENANCE SHOP	D001 D008 D019 D035 F002	PK,1,3,8,9
60067	1	USED OIL WITH 1,1,1 TRICHLOROETHANE	D008 F002	PK,1,4,7,8,9
60068	1	MACHINE AND CUTTING OILS WITH SOLVENT CONTAMINATION	D008 F002	1,4,8,9
60069	1	CONTAMINATED INSOLUBLE OIL	D008 F001	1,4,8,9
60070	1	CONTAMINATED INSOLUBLE OIL	D001 D018 D039	PK,MSDS,1,4,7,8,9
60072	3	SOLVENT CONTAMINATED WASTE OIL	D008 F002	PK,1,4,7,8,9

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

000021

WASTE ID#	DOE TYPE	WASTE NAME	US EPA HAZARDOUS WATE#	DETERMINATION BASIS
60073	1	CONTAMINATED INSOLUBLE OIL	D006	PK,1,[illegible],7,8,9
60074	1	WASTE FROM PLANT 6 MACHINERY	D001 D006 D009 F002	PK,1,3,7,8,9
60076	1	CONTAMINATED INSOLUBLE OIL	D001 D006 D009 F002	PK,1,3,7,8,9
60078	1	USED OIL AND SOLVENTS FROM GARAGE	D001 D006 D008 F002 F005	PK,1,3,5,8,9
60080	1	CONTAMINATED INSOLUBLE OIL FROM MAINTENANCE - GENERAL	D001 D007 D008 D019 D040 F002	PK,1,3,7,8,9
60081	1	USED OIL/SOLVENT FROM PLANT 7 MAINTENANCE	D001 D006 D008 D010 F002	PK,1,3,8,9
60083	1	CONTAMINATED INSOLUBLE OIL FROM BOILER PLANT STORAGE	D001 D008 D019 F002	1,4,7,8,9
60084	1	USED, CONTAMINATED MACHINE AND ENGINE OIL	D001 D008 D010 F002	PK,1,3,7,8,9
60085	1	WASTE OIL FROM PLANT 8 MAINTENACE	D001 D005 D006 D007 D008 D010 F002	1,3,4,7,8,9
60087	1	USED OIL CONTAMINATED WITH SOLVENTS	D001 D008 D039 F002	PK,1,3,8,9
60090	1	USED MERCO-DRI AND HYDRAULIC OIL	D001 D039	PK,1,3,4,8,9
60099	8	RAGS, SCREEN, PLASTIC AND PAPER	D008	PK,1,2,3,4,6,9
60100	8	CONTAMINATED BURNABLE TRASH	D039 U210	PK,MSDS,5
60105	6	CONTAMINATED BURNABLE TRASH	D006 D007	PK,4,6,9
60107	8	ASBESTOS ABATEMENT DEBRIS	D008	PK
60110	3	OILY SLUDGES FROM PLANT 5 METAL REDUCTION	D001	PK,1,3,7,8,9
60112	3	DRY RESIDUE FROM PLANT 5 CASTING AREA	D039	PK,1,4,9
60113	1	DARK GREEN OILY LIQUID FROM WASTE MANAGMENT-GENERAL	D007	1,3,7,8,9
60115	3	SUMP SLUDGES FROM GARAGE (NON-WWTS)	D001 F002	PK,1,4,5,7,8,9
60116	1	USED OIL WASTE DESTINED FOR INCINERATION AT OIL BURNER	D001 D007 D008 D018 D019 D039 D040	PK,1,2,3,4,7,8,9
60119	3	SLUDGES, OILY, FOR OXIDATION HIGH FREE METAL	D001 F001 F002	PK,1,2,4,7,8,9
60123	3	SOLVENT SEMISOLID	D039 F002	PK,1,2,4,5,6,7,8,9
60124	3	PAINT THINNERS AND PAINT RESIDUES	D009 D018 D035	PK,MSDS,1,4,9
60140	4	STEEL SHOT	D010	PK,MSDS,1,4,9
60152	4	U3O8 ROTEXED PLANT 8 FURNACE PRODUCT	F002	PK,1,4,9
60160	4	IMPURE UNH	D001	PK,MSDS
60193	2	PURE UNH SOLUTION	D001 D002	PK,MSDS
60306	4	HARDENED SALT BATH SLUDGE FROM RMI	D005	PK
60307	4	FURNACE SALT, SOLIDIFIED, CHLORIDE (PLANT 8 RECOVERY)	D005 D008	PK
60331	1	WATER\GAS MIXTURE TANK #9	D001 D018	1,4,7,8,9
60342	2	CONTAMINATED RAINWATER FROM UST # 5	D008 F002	PK
60450	4	CRUCIBLE COATING POWERS	D007	PK,MSDS

000022

68 12

See final page of keys to DETERMINATION BASIS codes and DOE WASTE STREAM TYPES

Key to "Determination Basis" Codes :

PK	Process Knowledge
MSDS	Material Safety Data Sheet

ANALYSES:

1. Total Volatile Organic
2. TCLP Volatile Organic
3. Total (TC) Metals
4. TCLP Metals
5. Visual Inspection of Waste
6. Paint Filter Liquids Test (PFLT)
7. pH
8. Flash Point
9. U-Total, % U235
10. PCBs
11. Total Semivolatile Organic
12. Total Pesticides
13. Total Thorium

Key to "DOE Waste Stream Types" :

1. Organic Liquids
2. Aqueous Liquids
3. Organic Sludges/particulates
4. Inorganic Sludges/particulates
5. Cemented Solids
6. Organic Debris
7. Inorganic Debris
8. Heterogeneous Debris
9. Soil with Organics
10. Soil with Inorganics
11. Soil with Organics and Inorganics
12. Labpacks with Organics
13. Labpacks without Organics
14. Reactive Metals
15. Explosives
16. Compressed Gases
17. Liquid Mercury
18. Elemental Lead
19. Beryllium Dust
20. Batteries
99. Other

000023

OHIO ENVIRONMENTAL PROTECTION AGENCY
DIRECTOR'S FINDINGS AND ORDERS AND SECTION IV CONSENT DECREE
QUARTERLY TECHNICAL PROGRESS REPORT

January 1, 1995 - March 31, 1995

BORING LOGS

CONTROL NO.:	FEMP LITHOLOGIC LOG	PAGE 1 OF 14

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION			PROJECT NO.: 20.03.07
BORING NUMBER: 11558	COORDINATES:	RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 3-2-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 3-2-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: ~~AUGER~~ ROTOSONIC TL 3-7-95	DRILLER / ~~HELPER~~ TL LEONARD BROWER

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
0.0	3-2-95	N/A	6"	MED STIFF (10YR 3/2) VERY DARK GRAYISH BROWN Silty CLAY/Clayey Silt w/ surface vegetation and root material LOW TO MED PLASTICITY MOIST	CL/ML	.75	microkp = 3.5 ppm γ_y = 20 cpm
0.5		N/A	6"	Same as 0.0 - 0.5 above	CL/ML	.75	
1.0		N/A	6"	same as 0.0 - 0.5 above except STIFF	CL/ML	1.25	
1.5		N/A	6"	STIFF (2.5Y 4/2) DARK GRAYISH BROWN TL 3-6-95 Clayey SILT/VERY SILTY CLAY w/ extensive iron oxide precipitation homogeneous throughout giving the appearance of an OLIVE BROWN COLOR TO THE MATRIX LOW PLASTICITY Slightly MOIST	CL/ML	1.5	
2.0		N/A	6"	Same as 1.5 - 2.0 above except w/ several areas of (2.5Y 3/2) VERY DARK GRAYISH BROWN clayey SILT/silty CLAY mottling (tilted vertical orientation)	CL/ML	1.75	
2.5		N/A	4"	same as 1.5 - 2.0 above except w/ several areas of (2.5Y 3/2) VERY DARK GRAYISH BROWN CLAYEY SILT/SILTY CLAY mottling (horizontal orientation)	CL/ML	1.25	
3.0		N/A	0	NO RECOVERY	N/A	N/A	
3.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0 ppm	3-2-95	0915
ALPHA	N/A	N/A	N/A
BETA / GAMMA	20 cpm	3-2-95	0915

NOTES: Driller's Helper's were:
BARRY FORTNER
BRIAN BABCOCK

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

 G:/WPSC/94-776.DRW (11-23-94)

CONTROL NO.:	FEMP **LITHOLOGIC LOG**	PAGE 2 OF 14

PROJECT NAME:	PROJECT NO.:
CRUZ PRE-DESIGN FIELD INVESTIGATION	20.03.07

BORING NUMBER:	COORDINATES:	RELATED FAL NO.s:
11558		

SURFACE ELEVATION:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE STARTED:
	N/A	N/A	N/A	3-2-95

GEOLOGIST:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE COMPLETED:
T. LAYNE	N/A	N/A	N/A	3-2-95

WATER USED DURING DRILLING:	DRILLING CONTRACTOR:	DRILLING EQUIPMENT:	DRILLER / ~~HELPER~~
NONE	Alliance	~~AUGER~~ ROTOSONIC	LEONARD BROWER

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
3.5		N/A	Ø	NO RECOVERY	N/A	N/A	
1ST CORE 4.0	3-2-95	N/A	8"	STIFF (2.5Y 4/1 to 4/2) DARK GRAY TO DARK GRAYISH BROWN VERY SILTY CLAY MATRIX w/ iron oxide precipitate particles homogeneous throughout except for mottling of (2.5Y 3/1) VERY DARK GRAY silty CLAY - irregular LOW PLASTICITY Slightly MOIST	CL	1.5	microtip = 5.0 ppm βγ = 20 cpm
4.5		N/A	8"	same as 4.0-4.5 above except VERY SOFT TO SOFT MED TO HIGH PLASTICITY MOIST	CL	<.25 to .5	
5.0		N/A	8"	same as 4.0-4.5 above except VERY SOFT and irregular area of 2-3% fine sand and 1% med grain sand [redacted] (2.5Y 6/1) GRAY SILT w/ iron oxide staining overall "feathery" flow transport pattern VERY MOIST TO WET	CL	<.25	
5.5		N/A	8"	VERY SOFT TO VERY STIFF (2.5Y 5/6) LT OLIVE BROWN SILT w/ horizontal (depositional sand) fracture and several coarse angular to subangular gravel at bottom measuring 35x30mm and 25mm x 20mm VERY MOIST TO SLIGHTLY MOIST AT BOTTOM OF INTERVAL	ML	<.25 to 2.5	
6.0		N/A	8"	VERY STIFF (2.5Y 4/4) OLIVE BROWN w/ DARK GRAYISH BROWN MOTTLING Clayey SILT w/ 1-2% subangular fine gravel and coarse sand, one or two angular coarse gravel 10x15mm Slightly MOIST	ML	2.5	
6.5		N/A	6"	VERY STIFF (2.5Y 5/1) GRAY Clayey SILT w/ very fine sand deposition in fractures 1% coarse sand/fine gravel NO to LOW PLASTICITY Slightly MOIST	ML	3.5 to 4.0	
2ND CORE 7.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:
*Extra recovery due to "FLUFFING"

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION	PROJECT NO.: 20.03.07
BORING NUMBER: 11558	COORDINATES:
RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 3-2-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 3-2-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance; DRILLING EQUIPMENT: ~~AUGER~~ ROTOSONIC; DRILLER / ~~HELPER~~: LEONARD BROWER

TL 3-8-95

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.0	3-2-95	N/A	6"	VERY SOFT (2.5Y 5/4) LT OLIVE BROWN SILT w/ one small area of (10YR 4/6) DK YELLOWISH BROWN MOTTLING and very fine sand depositional traces in fracture. NO TO LOW PLASTICITY. SLIGHTLY MOIST	ML	<.25	microtip = 9.0 ppm; $\beta\gamma$ = 10 cpm
7.5		N/A	6"	VERY SOFT (2.5Y 5/4) LT OLIVE BROWN SILT w/ traces of fine sand deposition in fracture — → LARGE SUBANGULAR GRAVEL 55 x 35 mm → MAJOR HORIZONTAL FRACTURE w/ (10YR 4/6) DK YELLOWISH BROWN fine gravel. MED PLASTICITY. VERY MOIST	ML	<.25	FINE GRAIN SAND +
8.0		N/A	6"	(2.5Y 5/4) LT OLIVE BROWN Clayey, silty SAND w/ 2-3 coarse gravels (40 x 25 mm) (15 x 10 mm) VERY fine sand grains w/ coarser grains in fracture type patterns — fine grains held in matrix of clayey silt. WET	SM/SC	N/A	
8.5		N/A	6"	Same as above 8.0-8.5 Silty SAND w/ areas of sandy silt w/ fracture type patterns of coarse grain sands and 10-15% subangular fine gravel, 40 mm x 30 mm irregularly shaped sandstone stained red by iron oxides. WET	SM/SC	N/A	
9.0		N/A	6"	(2.5Y 5/4) LT OLIVE BROWN Sandy SILT w/ areas of silty sand, 5-10% fine subangular gravel, w/ VERY MOIST → MAJOR HORIZONTAL FRACTURE w/ DEPOSITION OF POORLY SORTED WET	SM	N/A	FINE TO COARSE SAND
9.5		N/A	4"	(2.5Y 5/4) LT OLIVE BROWN Sandy SILT w/ fracture patterns of fine sand deposition. VERY MOIST	SM	N/A	
			2"	(2.5Y 5/4) LT OLIVE BROWN Silty SAND fine-grained w/ 3-5% coarse to med grain and 15-25% fine gravel. WET	SM	N/A	
10.0		N/A	6"	(2.5Y 5/4) LT OLIVE BROWN Silty SAND w/ 15-25% fine gravel. SAND is predominantly fine grained w/ 5-10% med to coarse sand. WET	SM	N/A	
10.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

CONTROL NO.:	FEMP **LITHOLOGIC LOG**	PAGE 4 OF 14

PROJECT NAME:	PROJECT NO.:
CRUZ PRE-DESIGN FIELD INVESTIGATION	20.03.07

BORING NUMBER:	COORDINATES:	RELATED FAL NO.s:
11558		

SURFACE ELEVATION:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE STARTED:
	N/A	N/A	N/A	3-2-95
GEOLOGIST:	**GROUNDWATER LEVEL:**	**DATE:**	**TIME:**	**DATE COMPLETED:**
T. LAYNE	N/A	N/A	N/A	3-2-95

WATER USED DURING DRILLING:	DRILLING CONTRACTOR:	DRILLING EQUIPMENT:	DRILLER / ~~HELPER~~:
NONE	Alliance	~~HUGER~~ ROTOSONIC TL 3-8-95	LEONARD BROWER

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
10.5		N/A	6"	(2.5Y 4/4) OLIVE BROWN Silty SAND 90x45mm cobble subangular-micro-crystalline Dolomite? Sand is predominantly fine grained w/ 5% med to coarse sand and 15-25% fine gravel WET	SM	N/A	
11.0		N/A	4 / 6" / 2"	(2.5Y 4/4) OLIVE BROWN Silty, Clayey SAND, poorly sorted w/ 25-35% fine to small coarse gravel - rounded to angular, Intrusions of (5Y 4/1) DARK GRAY Silty CLAY WET VERY SOFT (5Y 4/1) DK GRAY SILTY CLAY WET	SM/SC CL TL 3-6-95	N/A .75	
11.5		N/A	4"	VERY SOFT (5Y 4/1) DK GRAY Silty CLAY w/ 3-5% fine subangular to angular gravel MED STIFF LOW TO MED PLASTICITY VERY MOIST	CL	<.25 to .75	
12.0	3-2-95	N/A	6"	SOFT (5Y 4/1 to 4/2) DARK GRAY → OLIVE GRAY Silty CLAY w/ 10% subrounded coarse gravel, 5% fine subangular gravel, 1% med to coarse sand, 3-5% fine sand LOW PLASTICITY Slightly MOIST - MOIST	CL	.5	microtip = 8.7 ppm $\beta\gamma$ = 10 cpm
12.5		N/A	6"	Same as 12.0-12.5 except MED STIFF	CL	.75	
13.0		N/A	6"	Same as 12.0-12.5 except MED STIFF	CL	.75	
13.5		N/A	6"	Same as 12.0-12.5 except MED STIFF and increased fine sand ~~[illegible]~~ TL 3-6-95 deposition planes @ gravel's interface	CL	.75	
14.0							

BROWN → GRAY INTERFACE

3RD CORE

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G: / WPSC / 94-776.DRW (11-23-94

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION	PROJECT NO.: 20.03.07
BORING NUMBER: 11558	COORDINATES:
RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 3-2-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 3-2-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance; DRILLING EQUIPMENT: ~~HUGER~~ ROTOSONIC; DRILLER / HELPER: LEONARD BROWER

TL 3-8-95

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
14.0 – 14.5		N/A	6"	MED STIFF (5Y 4/1–4/2) DK GRAY TO OLIVE GRAY Silty CLAY w/ 2-3% fine sand, 1-2% med to coarse sand, poorly sorted fine (10%) gravel (angular to subangular), 5% coarse gravel. LOW PLASTICITY. Slightly moist TO moist	CL	.75	
14.5 – 15.0		N/A	6"	Same as 14.0 – 14.5	CL	.75	
15.0 – 15.5		N/A	6"	Same as 14.0–14.5	CL	.75	
15.5 – 16.0		N/A	6"	Same as 14.0 -14.5 except a large coarse gravel 55mm subangular Dolomite? and increasing moisture / increased fine sand 5%. * LOW PLASTICITY. moist	CL	.75 to .5	
16.0 – 16.5		N/A	6"	MED STIFF TO SOFT (5Y 4/1–4/2) DK GRAY TO OLIVE GRAY Silty CLAY w/ a large coarse subangular gravel (40x30mm), 10% fine sand 10% fine gravel. LOW PLASTICITY. VERY moist TO WET *	CL	.5 to .25	
16.5 – 17.0		N/A	Ø	NO RECOVERY	N/A	N/A	
4TH CORE 17.0 – 17.5		N/A	6"	SOFT (5Y 4/1) DARK GRAY Silty CLAY w/ 20% coarse gravel, 5% fine sand. LOW PLASTICITY. Slightly moist	CL	.25	microtip = 5.8 ppm; Py = 10 cpm

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES: ?
* moisture could be from sample extrusion method on Rotosonic Rig

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3581

G: / WPSC / 94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION	PROJECT NO.: 20.03.07
BORING NUMBER: 11558	COORDINATES:
RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 3-2-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 3-2-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance; DRILLING EQUIPMENT: HOGGER ROTOSONIC; DRILLER / HELPER: LEONARD BROWER

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
17.5		N/A	6"	MED STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 25-35% Coarse subangular gravel 2-3% fine sand TL 3-6-95 LOW PLASTICITY Slightly MOIST	CL	.75	
18.0		N/A	6"	Same as 17.5-18.0 ~~but very soft~~ TL 3-6-95	CL	~~.25~~ .75	
18.5		N/A	6"	Same as 17.5-18.0 except STIFF and large bryozoan fragment, also sample is disturbed but appears that a possible wet gravel seam in pocket may exist (Concentrated coarse gravel pocket) SLIGHTLY MOIST / POSSIBLE WET SEAM *	CL	1.5	
19.0		N/A	6"	COBBLE 80x70mm POSSILIZED LIMESTONE FRAGMENT Same as 17.5-18.0 except for cobble mentioned above and 10% fine gravel LOW PLASTICITY Slightly MOIST	CL	1.0	
19.5		N/A	6"	MED STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 10% poorly sorted fine gravel and 2-3% fine sand LOW PLASTICITY Slightly MOIST	CL	1.0	
20.0		N/A	6"	Same as above 19.5-20.0	CL	1.0	
20.5		N/A	6"	STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 30-40% Coarse subangular gravel Concentrated gravel (pocket or seam?) LOW PLASTICITY Slightly MOIST	CL	2.0 to 2.5	
21.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:
* Could be from sample extrusion method on Rotosonic Rig

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION	PROJECT NO.: 20.03.07
BORING NUMBER: 11558	COORDINATES:
RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 3-2-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 3-2-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance
DRILLING EQUIPMENT: ~~HUGER~~ ROTOSONIC	DRILLER / HELPER: LEONARD BROWER

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
21.0				VERY STIFF (5Y 4/1) DARK GRAY SILTY CLAY w/ several large coarse gravel suspended in clay matrix in scattered pattern – several are water eroded, rounded to sub rounded and one w limestone fragment LOW PLASTICITY 25 to 60mm in length slightly moist 5% fine gravel/coarse sand	CL	3.0	1-2% fine sand
21.5				NO RECOVERY		3.75	
22.0 (5TH CORE)	3-2-95			VERY STIFF (5Y 4/1) DARK GRAY silty CLAY w/ 5-10% fine sand, 1-2% coarse sand, 35% coarse gravel (2 gravels – angular 40x30mm – 45x35mm) 5-10% fine angular to subangular gravel NO TO LOW PLASTICITY DRY	CL	4.0	Microrip = 5.8 ppm Pg = 10 cpm
22.5				same as 22.0 - 22.5 except coarse gravel are smaller (25mm)(15mm) and 3-5% med grain sand	CL	3.0	
23.0				Same as 22.0 - 22.5 and 3-5% med grain sand	CL	3.25	
23.5				Same as 22.0 - 22.5 and 3-5% med grain sand except less coarse gravel – 10% brachiopod fragment	CL	2.75	
24.0				same as 22.0-22.5 except no large coarse gravel bryozoan fragment	CL	2.75	
24.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

CONTROL NO.:

FEMP

LITHOLOGIC LOG

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION

PROJECT NO.: 20.03.07

BORING NUMBER: 11558

COORDINATES:

RELATED FAL NO.s:

SURFACE ELEVATION:

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 3-2-95

GEOLOGIST: T. LAYNE

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3-2-95

WATER USED DURING DRILLING: NONE

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ~~AUGER~~ ROTOSONIC

DRILLER / ~~HELPER~~: LEONARD BROWER

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.5 – 25.0		N/A	6"	VERY STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 5-10% fine sand, 1-2% coarse sand, 10-15% fine gravel (subangular), 5% coarse angular gravel. NO TO LOW PLASTICITY DRY	CL	2.25	
25.0 – 25.5		N/A	6"	Same as 24.5-25.0 except increased coarse gravel (20%) Bryozoan fragment twig fragment	CL	3.25	
25.5 – 26.0		N/A	6"	Same as 24.5-25.0 except increased coarse gravel 50% to 60% (4 gravels - 30mm to 55mm in size) — Silty, Gravelly CLAY — one of these contains a brachiopod	CL / GM	3.25	
26.0 – 26.5		N/A	Ø	NO RECOVERY	N/A	N/A	
26.5 – 27.0		N/A	Ø	NO RECOVERY	N/A	N/A	
27.0 – 27.5 (6TH CORE)	3-2-95	N/A	6"	VERY STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 10-15% fine gravel, 5% fine sand, 1-2% med to coarse sand and → a cobble - limestone subangular - subrounded 110 x 90 x 75 mm LOW PLASTICITY Slightly MOIST	CL	2.25	Microtip = 3.0 ppm Bg = 10 Bg
27.5 – 28.0		N/A	6"	Same as above 27.0-27.5 except no cobble and 20-25% coarse angular gravel (includes brachiopod) LOW PLASTICITY Slightly MOIST	CL	2.25	

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION	PROJECT NO.: 20.03.07
BORING NUMBER: 11558	COORDINATES:
RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 3-2-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 3-2-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance; DRILLING EQUIPMENT: ~~AUGER~~ ROTOSONIC; DRILLER / ~~HELPER~~: LEONARD BROWER

TL 3-8-95

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
28.0		N/A	6"	VERY STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 5% fine sand, 1-2% med to coarse sand, 5% fine gravel and 5% coarse gravel. LOW PLASTICITY. Slightly Moist	CL	2.0	
28.5		N/A	6"	same as 28.0-28.5 except increased fine gravel - 10%	CL	2.5	
29.0		N/A	6"	same as 28.0-28.5 ~~except~~	CL	2.75	
29.5		N/A	6"	STIFF (5Y 4/1) DARK GRAY Silty CLAY MATRIX w/ cobbles (75x50x20mm) and large coarse gravels that are subangular, 5-10% fine ~~sand~~ sand, Slightly Moist 2-7% fine gravel. LOW PLASTICITY. limestone fossil conglomerate	CL / GC	1.5	Concentration of gravels/cobbles
30.0		N/A	6"	STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 15% fine gravel angular to subangular, 10% fine sand. LOW PLASTICITY. Slightly Moist	CL	1.0	
30.5		N/A	6"	STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 10% fine gravel, 5-10% fine sand, several fossil fragments (brachiopods). LOW PLASTICITY. Slightly Moist TO MOIST	CL	1.0	
31.0		N/A	6"	same as above 30.5-31.0	CL	1.0	
31.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION

PROJECT NO.: 20.03.07

BORING NUMBER: 11558

COORDINATES:

RELATED FAL NO.s:

SURFACE ELEVATION:

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 3-2-95

GEOLOGIST: T. LAYNE

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3-2-95

WATER USED DURING DRILLING: NONE

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ~~HUGGER~~ ROTOSONIC

DRILLER / HELPER: LEONARD BROWER

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.5		N/A	Ø	NO RECOVERY	N/A	N/A	
7TH CORE 32.0	3-2-95	N/A	6"	STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 2-3% fine sand, 1-2% coarse sand, 3-5% fine gravel (subangular) LOW PLASTICITY SLIGHTLY MOIST	CL	1.5	Microrp = 4.0 ppm Bg = 10 cpm
32.5		N/A	6"	Same as 32.0-32.5	CL	1.0	
33.0		N/A	6"	Same as 32.0-32.5 except a cobble, 90x70x35mm, limestone fossil Conglomerate	CL	1.0	
33.5		N/A	6"	same as 32.0 - 32.5	CL	1.25	
34.0		N/A	6"	same as 32.0 - 32.5	CL	1.0	
34.5		N/A	6"	same as 32.0 - 32.5	CL	2.0	
35.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

CONTROL NO.:	FEMP LITHOLOGIC LOG	PAGE 11 OF 14

PROJECT NAME:	PROJECT NO.:
CRUZ PRE-DESIGN FIELD INVESTIGATION	20.03.07

BORING NUMBER:	COORDINATES:	RELATED FAL NO.s:
11558		

SURFACE ELEVATION:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE STARTED:
	N/A	N/A	N/A	3-2-95

GEOLOGIST:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE COMPLETED:
T. LAYNE	N/A	N/A	N/A	3-2-95

WATER USED DURING DRILLING:	DRILLING CONTRACTOR:	DRILLING EQUIPMENT:	DRILLER / ~~HELPER~~:
NONE	Alliance	~~AUGER~~ ROTOSONIC	LEONARD BROWER

TL 3-8-95

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
35.0		N/A	2"	VERY STIFF (5Y 4/1) DARK GRAY SILTY CLAY w/ (2.5Y 5/6) LT OLIVE BROWN SILT "SWIRLS" * DRY	CL	3.5	Swirls, lamination, Cobble, sand
			4"	COBBLE 95X80X50mm "FLAT TOP + BOTTOM" LIMESTONE w/ FOSSILS (2.5Y 5/4 — 10YR 5/4) YELLOWISH BROWN/LT OLIVE BROWN (MIXED) well-sorted fine sand w 10-20% fine subangular to rounded gravel	SW	N/A	
35.5		N/A	6"	Sand as described above 35.15-35.5'	SW	N/A	
36.0		N/A	6"	Sand as described above 35.15-35.5	SW	N/A	
36.5		N/A	Ø	NO RECOVERY	N/A	N/A	
37.0		N/A	6"	(2.5Y 4/4) OLIVE BROWN SAND w/ 10-15% poorly sorted fine to coarse gravel (angular to subangular), sand is well-sorted fine (subrounded to subangular) w/ 3-5% med grain sand DAMP	SW	N/A	
37.5		N/A	6"	(2.5Y 5/4 LT OLIVE BROWN) Sandy, silty GRAVEL gravel is poorly sorted/subangular 75% of mass — coarse to fine 20% SILT 5% SAND DAMP	GM	N/A	
38.0		N/A	6"	~~(2.5Y 5/4) LT OLIVE BROWN SAND w/ poorly sorted fine to coarse gravel 20-30%, sand is poorly sorted fine to coarse - subangular to subrounded, DAMP~~ TL 3-7-97	SP	N/A	THIS INTER[illegible] sam[illegible] abo[illegible]
38.5							

CLAY / SAND INTER-PACE

8TH CORE

SANDY, SILTY GRAVEL

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:
* Evidence of lamination below the "swirls" (Broken core pieces in sand below exhibit very thin bedding planes and below this fragments show evidence of a "compacted" sand layer

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST. ** lamination (15-20mm) layer and compacted sand (20[illegible] thick layer may exist beneath cobble (fragments displaced in sand below)
[INTERVAL WAS LOOSE/DISTURBED WHEN RECOVERED]

"CRUST" lik[illegible] layer

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION	PROJECT NO.: 20.03.07
BORING NUMBER: 11558	COORDINATES: / RELATED FAL NO.s:
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A / DATE: N/A / TIME: N/A / DATE STARTED: 3-2-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A / DATE: N/A / TIME: N/A / DATE COMPLETED: 3-2-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance / DRILLING EQUIPMENT: ~~HOGGER~~ ROTOSONIC / DRILLER / ~~HELPER~~: LEONARD BROWER

TL 3-8-95

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
38.5		N/A	6"	(2.5Y 5/4) LT OLIVE BROWN SAND w/ poorly sorted fine to coarse gravel 20-30%, SAND is poorly sorted fine to coarse - subangular to subrounded. DAMP	SP	N/A	
39.0		N/A	6"	(2.5Y 6/4) LT YELLOWISH BROWN SAND that is well-sorted and fine w/ 2-5% med to coarse grain sand and 15-20% fine subangular gravel DRY	SW	N/A	
39.5		N/A	6"	Same as above 39.0-39.5	SW	N/A	
40.0		N/A	6"	(2.5Y 6/3) LT YELLOWISH BROWN SANDY SILT w/ 5% fine gravel and compacted silt "clumps" that break under finger pressure DRY	ML	N/A	
40.5		N/A	6"	Same as above 40.0-40.5 w/ (15-20 mm thick) "crust" fragments* exhibiting lamination patterns of deposition DRY	ML	N/A	
41.0		N/A	Ø"	NO RECOVERY	N/A	N/A	
41.5		N/A	Ø	NO RECOVERY	N/A	N/A	
42.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA			

NOTES: *These fragments in bottom of bag - cannot be certain of exact depth. "crust" is compacted silt w/ trace fine gravel.

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION	PROJECT NO.: 20.03.07
BORING NUMBER: 11558	COORDINATES:
RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 3-2-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 3-2-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance
DRILLING EQUIPMENT: ~~AUGER~~ ROTOSONIC	DRILLER / ~~HELPER~~: LEONARD BROWER

TL 3-8-95

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
42.0				NO RECOVERY			
42.5				NO RECOVERY			
43.0				NO RECOVERY			
43.5				NO RECOVERY			
44.0				NO RECOVERY			
44.5				NO RECOVERY			
45.0				NO RECOVERY			
45.5				NO RECOVERY			

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION

PROJECT NO.: 20.03.07

BORING NUMBER: 11558

COORDINATES:

RELATED FAL NO.s:

SURFACE ELEVATION:

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 3-2-95

GEOLOGIST: T. LAYNE

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3-2-95

WATER USED DURING DRILLING: NONE

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ~~Hugger~~ ROTOSONIC

DRILLER / HELPER: LEONARD BROWER

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
45.5				NO RECOVERY			
46.0				NO RECOVERY			
46.5				NO RECOVERY			
9TH CORE 47.0				BOTTOM OF BORING @ 47.0'			

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE FIRST PAGE		
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:	
PROJECT NAME:	CRUZ PRE-DESIGN FIELD INVESTIGATION
PROJECT NO.:	20.03.07
BORING NUMBER:	11559
COORDINATES:	
RELATED FAL NO.s:	
SURFACE ELEVATION:	
GROUNDWATER LEVEL:	N/A
DATE:	N/A
TIME:	N/A
DATE STARTED:	2-22-95
GEOLOGIST:	T. LAYNE
GROUNDWATER LEVEL:	N/A
DATE:	N/A
TIME:	N/A
DATE COMPLETED:	2-22-95
WATER USED DURING DRILLING:	NONE
DRILLING CONTRACTOR:	Alliance
DRILLING EQUIPMENT:	AUGER-MOBILE B-61
DRILLER / HELPER:	BOB ERICKSON / MARK LAUB

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
0.0	1125 2-22-95	1	6"	VERY SOFT (10YR 3/2) VERY DARK GRAYISH BROWN Clayey SILT w/ surface vegetation/roots NO TO LOW PLASTICITY MOIST	ML	0.0	microhp = Ø ppm
0.5		5	1"	Same as 0.0 - 0.5			
1.0		8	Ø	NO RECOVERY	N/A	N/A	
1.5	1134 2-22-95	1	6"	Same as 0.0-0.5 except no surface vegetation	ML	.5	microhp = Ø ppm
2.0		2	6"	STIFF (10YR 3/2) VERY DARK GRAYISH BROWN Silty CLAY w/ root material and trace of iron oxide LOW PLASTICITY MOIST	CL	2.0	
2.5		5	1"	Same as 2.0-2.5 except increased iron oxide precipitate	CL	1.5	
3.0	1143 2-22-95	4	6"	Same as 2.0-2.5 except No iron oxides	CL	1.0	microhp = Ø ppm
3.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	Ø ppm	2-22-95	1120
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION

PROJECT NO.: 20.03.07

BORING NUMBER: 11559

COORDINATES:

RELATED FAL NO.s:

SURFACE ELEVATION:

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A

DATE STARTED: 2-22-95

GEOLOGIST: T. LAYNE

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A

DATE COMPLETED: 2-22-95

WATER USED DURING DRILLING: NONE

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: HUGER

DRILLER / HELPER: BOB ERICKSON / MARK LAUB

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
3.5			1"	Same as 2.0-2.5 except no iron oxides	CL	1.0	Microhp = Ø ppm
		5	5"	STIFF (2.5Y 4/2) DARK GRAYISH BROWN Silty CLAY matrix w/ 80% of surface break area covered in iron oxide precipitates, trace of 2-3mm fragments of black lignite, trace of iron particle LOW PLASTICITY MOIST	CL	2.0	P_g = 60 cpm sparkling, 1% med grain sand
4.0		8	5"	Same as 3.5-4.0	CL	2.25	
4.5	1159 2-22-95	2	3"	STIFF (10YR 3/2) VERY DARK GRAYISH BROWN Silty CLAY w/ irregular intrusional pattern of (2.5Y 4/4) OLIVE BROWN Silty CLAY	CL	1.25	Microhp = Ø ppm
			3"	1/2 mm laminated pattern of (2.5Y 5/6, 4/4, and 5/2) measures 15mm vertically THEN, (2.5Y 5/2) GRAYISH BROWN CLAY MATRIX w/ iron oxide precipitate over 50% of surface area LOW PLASTICITY MOIST	CL	1.25	P_g = 80 cpm
5.0		4	1" STIFF	IRREGULAR PATTERN OF MOTTLING w/ V. DK. GRAYISH BROWN, LT OLIVE BROWN, OLIVE BROWN AND IRON OXIDE PRECIPITATES (TRACES OF FRACTURE PATTERN?)	CL	1.5	
			1"	(2.5Y 3/1) V. DARK GRAY SILTY CLAY w/ 1-2% MED-COARSE SAND			
5.5			1"	IRREGULAR PATTERN OF MOTTLING REPEATED LOW PLASTICITY — MOIST			
		4	5"	VERY SOFT (2.5Y 5/3) LT OLIVE BROWN Silty CLAY matrix w/ 70-80% of surface area covered w/ iron oxide precipitates. LOW PLASTICITY —	CL	<.25	MOISTURE INCREASING
6.0			1"	(2.5Y 5/2) GRAYISH BROWN VERY SILTY CLAY w/ heavy iron oxides LOW PLASTICITY WET	CL/ML	<.25	
	1205 2-22-95	2	6"	VERY SOFT (2.5Y 5/4) LT OLIVE BROWN Silty CLAY matrix w/ evidence of a lighter color silt/clay fracture pattern n lamination pattern LOW PLASTICITY MOIST	CL	<.25	Microhp = Ø ppm P_g = 80 cpm
6.5		2	3"	Same as 6.0-6.5 except some DARK GRAY BROWN MOTTLING (IRREGULAR PATTERN) and iron oxide precipitates MOIST	CL	<.25	
		VERY LOOSE	1"	(2.5Y 4/4) OLIVE BROWN Clayey SAND w/ 20-30% fine gravel that is poorly sorted and angular to rounded	SC		
7.0							

EXTERIOR SURFACE OF SPOON IS WET

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA	50-80 cpm	2-22-95	1140

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

6812

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PAGE 3 OF 10

PROJECT NAME:	PROJECT NO.:
CRUZ PRE-DESIGN FIELD INVESTIGATION	20.03.07

BORING NUMBER:	COORDINATES:	RELATED FAL NO.s:
11559		

SURFACE ELEVATION:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE STARTED:
	N/A	N/A	N/A	2-22-95

GEOLOGIST:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE COMPLETED:
T. LAYNE	N/A	N/A	N/A	2-22-95

WATER USED DURING DRILLING:	DRILLING CONTRACTOR:	DRILLING EQUIPMENT:	DRILLER / HELPER:
NONE	Alliance	AUGER	BOB ERICKSON / MARK LAUB

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.0		6	Ø	NO RECOVERY	N/A	N/A	
7.5	1236 2-22-95	6	2"	VERY SOFT (2.5Y 3/1) V. DARK GRAY SILTY CLAY w/ intrusions of 5/4 LT OLIVE BROWN - evidence of GRAY-BROWN	CL	<.25	Red oxide LAMINATION PATH
			2"	SAND AND GRAVEL STRINGER - 70% coarse angular to rounded gravel and 10-20% fine SAND, 5% med to coarse SAND	GM	<.25	Microtip = Ø ppm
			2"	VERY SOFT (2.5Y 5/6) LT OLIVE BROWN CLAYEY SILT w/ 1-2% fine subangular to angular gravel NO-LOW PLASTICITY MOIST	ML	~~<.25~~ 2.0	βγ = 80 cpm
8.0		7	6"	Same clayey silt as immediately above ↑ except less moisture	ML	2.0	
8.5		11	2"	VERY STIFF (2.5Y 5/4) LT OLIVE BROWN Clayey SILT NO TO LOW PLASTICITY DRY	ML	3.5	
			2"	VERY STIFF (2.5Y 5/1) DARK GRAY Clayey SILT NO TO LOW PLASTICITY DRY	ML	3.5	
9.0	1245 2-22-95	8	3"	STIFF (2.5Y 4/4) OLIVE BROWN Clayey SILT w/ fracture deposition or stringer of a very fine silty SAND, trace of fine gravel slightly MOIST — IRON oxides indicate possible depositional fracture pattern	ML	1.5	Microtip = Ø ppm
			3"	STIFF (2.5Y 4/3) OLIVE BROWN Clayey SILT	ML	1.5	βγ = 80 cpm
9.5		9	3"	STIFF (2.5Y 5/3) Clayey SILT w/ very fine sand	ML	20	
			3"	Same as immediately above except 5% fine angular gravel; grading to a fine sand deposition which then grades to a clayey sandy SILT w/ 30-40% sand that is fine grain	ML ↓ SM ↓ ML	20 MOIST	
10.0		8	6"	VERY STIFF (2.5Y 5/3) LT OLIVE BROWN Clayey sandy SILT w/ 10-15% fine gravel (subangular) grades into → VERY SILTY CLAY/Clayey SILT w/ 10-15% fine subangular gravel NO TO LOW PLASTICITY MOIST	ML ↓ ML/CL	2.5	
10.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION

PROJECT NO.: 20.03.07

BORING NUMBER: 11559

COORDINATES:

RELATED FAL NO.s:

SURFACE ELEVATION:

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2-22-95

GEOLOGIST: T. LAYNE

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2-22-95

WATER USED DURING DRILLING: NONE

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: HUGER

DRILLER / HELPER: BOB ERICKSON / MARK LAUB

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
10.5	1255 2-22-95	6	1"	VERY STIFF (2.5Y 5/4) CLAYEY SANDY SILT w/ 5% poorly sorted fine angular gravel MOIST	ML	3.5	
11.0			5"	VERY STIFF (2.5Y) GRAYISH BROWN Clayey SILT - Silty CLAY w/ 10% fine subangular gravel increasing to 15-20% fine gravel 1-2% coarse sand NO PLASTICITY MOIST	ML/CL	3.5	
11.5		8	6"	same as above except w/ 20-30% coarse subangular gravel	ML/CL	3.0	
12.0		12	3"	same as 10.5-11.0 except w/ 20-30% coarse subangular gravel	ML/CL	3.5	
12.5	1335 2-22-95	6	6"	STIFF (2.5Y 5/6) LT OLIVE BROWN CLAYEY SILTY SAND - Sandy SILT, 2-3% fine gravel MOIST	SM/ML	1.25	Microtip = Ø ppm
			5"	STIFF (2.5Y 4/1) DARK GRAY Silty CLAY w/ 5% fine to med grain sand and 2-5% fine subangular to angular gravel LOW PLASTICITY Slightly MOIST	CL	1.25	$\beta\gamma$ = 60 cpm
13.0		9	6"	same as immediately above (last 5 inches) except 5% fine gravel	CL	3.25	
13.5		10	5"	same as last 5 inches of 12.0-12.5 except less fine gravel (2%)	CL	2.5	
14.0	1356 2-22-95	5		STIFF (2.5Y 4/2 to 4/1) DARK GRAYISH BROWN TO DARK GRAY SILTY CLAY w/ scattered 2-3% fine subangular gravel and 1-3% fine sand LOW PLASTICITY MOIST	CL	1.0	Microtip = Ø ppm $\beta\gamma$ = 80 cpm

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION			PROJECT NO.: 20.03.07
BORING NUMBER: 11559	COORDINATES:	RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 2-22-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 2-22-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: AUGER	DRILLER / HELPER: BOB ERICKSON / MARK LALB

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
14.0							
		7	6"	same as 13.5 - 14.0 except increased fine gravel (3-5% of mass) ← A Coarse gravel that is 40 x 20 mm and HORIZONTAL SAND DEPOSITION TRACE — FRACTURE?	CL	1.5	
14.5							
		9	4"	same as 13.5 - 14.0 w/ 3-5% fine gravel LOW PLASTICITY MOIST	CL	.75	
15.0							
	1410 2-22-95	2	6"	SOFT (2.5Y 4/1) DARK GRAY SILTY CLAY w/ 2-3% fine sand, 1% med-coarse sand, 2-5% fine subangular gravel LOW PLASTICITY MOIST	CL	.5	Microhp = Ø ppm γ = 50 cpm
15.5							
		4	4"	same as 15.0-15.5 except A 45 x 25 mm coarse subrounded gravel	CL	1.25	
16.0							
		4	Ø	NO RECOVERY	N/A	N/A	
16.5							
	1420 2-22-95	3	2"	VERY SOFT (2.5Y 5/1) GRAY SILTY SANDY CLAY (very fine sand) WET	CL	<.25	Microhp = Ø ppm γ = 80 cpm
			4"	same as above but drier LOW TO MED PLASTICITY VERY MOIST	CL	<.25	
17.0							
		3	6"	same as immediately above (last 4 inches)↑ except 5% very fine gravel (↔) coarse sand and 10% fine sand LOW PLASTICITY MOIST	CL	<.25	
17.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION	PROJECT NO.: 20.03.07
BORING NUMBER: 11559	COORDINATES:
RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 2-22-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 2-22-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance; DRILLING EQUIPMENT: HUGER; DRILLER / HELPER: BOB ERICKSON / MARK LAUB

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
17.5		6	6"	Same as last 4 inches of 16.5-17.0 INTERVAL ~~except~~ TL 2-23-95	CL	<.25	
18.0	1432 2-22-95	3		(2.5Y 5/1) GRAY VERY SILTY CLAY - clayey SILT w/ scattered 2-5% fine gravel and 2-5% fine to med grain sand homogeneous throughout LOW PLASTICITY VERY MOIST	CL/ML		
18.5		4		Same as 18.0-18.5	CL/ML		
19.0		7	3"	Same as 18.0-18.5	CL/ML		
			1"	CLAYEY SILT — ALMOST A FINE SAND	ML		
			2"	STIFF (2.5Y 4/1) DARK GRAY VERY SILTY CLAY w/ scattered fine gravel and pocket of fine to coarse sand, one coarse subrounded gravel (25mm) LOW PLASTICITY VERY MOIST	CL	2.0	
19.5	1448	4	3"	VERY SOFT (5Y 5/1) GRAY SILTY CLAY w/ 3% fine sand, 2-3% fine gravel to coarse sand LOW-MED PLASTICITY VERY MOIST	CL	<.25	microhp = Ø ppm Bg = 70 cpm
			3"	(5Y 5/1) GRAY Clayey, sandy GRAVEL poorly sorted — fine to coarse (Gravel up to 30mm subrounded) WET	GC	N/A	
20.0		4	6"	(5Y 5/1) GRAY VERY SILTY CLAY w/ 1-2% coarse sand, 2-3% fine gravel and increased fine sand (5%) MOIST			
20.5		7	6"	Same as 20.0-20.5 except one coarse gravel 25 mm	CL		
21.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94)

CONTROL NO.:	FEMP LITHOLOGIC LOG	PAGE 7 OF 10

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION				PROJECT NO.: 20.03.07
BORING NUMBER: 11559	COORDINATES:	RELATED FAL NO.s:		
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 2-22-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 2-22-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: HUGER	DRILLER / HELPER: BOB ERICKSON / MARK LAUB	

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
21.0	1504 2-22-95	4	6"	VERY SOFT (5Y 5/1) GRAY VERY Silty CLAY w/ 3% fine sand, 5% fine gravel and 5-10% coarse gravel WET	CL	<.25	
21.5		6	6"	same as 21.0 - 21.5 except, VERY MOIST	CL	<.25	
22.0		10	6"	same as 21.0 - 21.5 except increased fine sand (5-8%) and STIFF MOIST	CL	1.0	
22.5	1510	6	4"	VERY SOFT (5Y 4/1) DARK GRAY Silty Sandy CLAY w/ 10-15% fine sand, 1-3% fine angular gravel WET	CL	<.25	
			2"	same as above except increased fine gravel (10-15%)	CL	<.25	
23.0		11	6"	VERY STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ traces of wood fibers and "clay impression" of a ~~[illegible]~~ approximately 2mm in size - perfectly formed 2-3% sand LOW PLASTICITY 10-15% fine gravel MOIST	CL	2.25	IMPRESSION
23.5		14	6"	same as 23.0 - 23.5 ~~except~~ 10-15% fine gravel 2-3% sand no ~~[illegible]~~ MOIST	CL	2.0	
24.0	1526 2-22-95	11	2"	STIFF (5Y 4/1) DARK GRAY Silty CLAY MOIST	CL	1.5	Microtip = 0.2 ppm β_y = 70 cpm
			4"	(5Y 4/1) DARK GRAY Silty CLAY w/ 2-3% fine sand - trace gravel WET			
24.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G: / WPSC / 94-776.DRW (11-23-94)

CONTROL NO.:	FEMP **LITHOLOGIC LOG**	PAGE 8 OF 10

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION				PROJECT NO.: 20.03.07
BORING NUMBER: 11559	COORDINATES:		RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 2-22-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 2-22-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: AUGER	DRILLER / HELPER: BOB ERICKSON / MARK LAUB	

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.5		16	4"	Same as 24.0-24.5 except Coarse limestone fragment at bottom of spoon MOIST	CL		
25.0		50/.4"	Ø	NO RECOVERY	N/A	N/A	
25.5	1534 2-22-95	12	6"	VERY SOFT (5Y 4/1) DARK GRAY Silty CLAY w/ coarse gravel scattered throughout and 5-10% fine sand MOIST	CL	<.25	Microtip = Ø ppm β_γ = 70 cpm
26.0		14	6"	same as 25.5-26.0 except traces of wood twigs	CL	2.25	
26.5		21	4"	same as 25.5-26.0 except increased angular coarse gravel (25-30%) APPEARS THAT ROCK SHAVED RECOVERY	CL	.75	
27.0	1552	6	6"	HARD (5Y 4/1) DARK GRAY Silty CLAY w/ scattered fine gravel (5-10%) and 1 coarse gravel MOIST	CL	4.5	microtip = Ø ppm β_γ = 80 cpm
27.5		24	3"	same as 27.0-27.5 MOIST	CL	2.25	
			1"	sand and gravel seam/stringer WET	GC	N/A	
			2"	GRAVELLY CLAY (fine gravel) and 10-15% poorly sorted sand and →	CL/GC	→ Clayey sand & gravel	
28.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G: / WPSC / 94-776.DRW (11-23-94)

6812

CONTROL NO.:	FEMP LITHOLOGIC LOG	PAGE 9 OF 10

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION		PROJECT NO.: 20.03.07
BORING NUMBER: 11559	COORDINATES:	RELATED FAL NO.s:

SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 2-22-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 2-22-95

WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: AUGER	DRILLER / HELPER: BOB ERICKSON / MARK LAUB

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
28.0		50/Ø"	Ø	NO RECOVERY	N/A	N/A	
28.5	1600	32	6"	VERY SOFT (5Y 4/1) DARK GRAY Silty CLAY ~~mixed w/~~ TL 2-22-95 w/ scattered coarse gravel MOIST	CL / ~~CG~~ TL 2-22-95	<.25	Microtip = Ø ppm Bγ ~ 70 cpm
29.0		22	3"	same as 28.5-29.0 w/ increased fine gravel & SAND	CL	2.0	
			1"	sandy gravelly CLAY	CL		
			2"	Silty sand w/ 2-3% fine gravel (GRAY IN COLOR) MOIST	SM	N/A	
29.5		19	2"	Silty SAND w/ 2-3% fine gravel (GRAY IN COLOR) MOIST	SM		
			4"	HARD (5Y 4/1) DARK GRAY Silty CLAY A coarse gravel 45mm in size	CL	4.5	
30.0	1615	6	6"	VERY STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ scattered fine to coarse gravel (10-15% fine gravel) (10% coarse gravel) MOIST	CL	2.25	Microtip = Ø ppm Bγ ~ 80 cpm
30.5		13	6"	same as 30.0 - 30.5	CL	3.0	
31.0		24	6"	same as 30.0-30.5	CL	4.5	
31.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G: / WPSC / 94-776.DRW (11-23-94)

000047

FEMP

LITHOLOGIC LOG

CONTROL NO.:

PROJECT NAME: CRUZ PRE-DESIGN FIELD INVESTIGATION	PROJECT NO.: 20.03.07
BORING NUMBER: 11559	COORDINATES:
RELATED FAL NO.s:	
SURFACE ELEVATION:	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 2-22-95
GEOLOGIST: T. LAYNE	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 2-22-95
WATER USED DURING DRILLING: NONE	DRILLING CONTRACTOR: Alliance; DRILLING EQUIPMENT: HUGER; DRILLER / HELPER: BOB ERICKSON / MARK LALB

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.5 – 32.0	1641	12	6"	VERY STIFF (5Y 4/1) DARK GRAY Silty CLAY w/ 2-5% poorly sorted fine gravel and 2-3% fine to med sand LOW PLASTICITY MOIST		3.5	Microtip = Ø ppm Pg = 60 cpm
32.0 – 32.5		13	6"	Same as 31.5-32.0 except HARD		4.5	
32.5 – 33.0		22	6"	Same as 31.5-32.0		3.5	
33.0 – 33.5	1652	11	6"	Same as 31.5-32.0 except MED STIFF and 2-5% coarse sand and VERY MOIST		.75	
33.5 – 34.0		15	6"	Same as 31.5-32.0 except a coarse gravel – 30 mm and MOIST		3.5	
34.0 – 34.5		20	6"	Same as 31.5-32.0 BOTTOM OF BORING @ 34.5'		3.0	
34.5 – 35.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID			
ALPHA			
BETA / GAMMA			

NOTES:

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G: / WPSC / 94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-008	PAGE 1 OF 54
PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31550	COORDINATES: NA
RELATED FAL NO.(s): NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE STARTED: 1/19/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE COMPLETED: 1/27/95
WATER USED DURING DRILLING: 206 Gallons	DRILLING CONTRACTOR: Alliance / DRILLING EQUIPMENT: Retasonic / DRILLER / HELPER: Brower/Fayetner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
0.0	1055 1-19-95 404056 ~~403975~~	NA	6	Soft 10YR 4/3 - Dark Brown Silty Clay with Roots, med. plast. slightly moist.	CL	.25	PID 12:00 βγ 30 Film Roll 1
0.5	1055 1-19-95 404056 ~~403975~~	NA	6	SAA	CL	.25	PID 12.0 βγ 30
1.0	1055 1-19-95 404056 ~~403975~~	NA	6	Stiff 10YR 5/6 - Yellowish Brown Silty Clay with a trace of fine sand. med. plast. slightly moist.	CL	1.5	PID 12.0 βγ 30
1.5	1055 1-19-95 404056 ~~403975~~	NA	6	Stiff 10YR 5/6 - Yellowish Brown Silty Clay mn. stains med. plast. slightly moist.	CL	1.5	PID 12.0 βγ 30
2.0	1055 1-19-95 404056 ~~403975~~	NA	6	SAA	CL	1.5	PID 12.0 βγ 30
2.5	1055 1-19-95 404056 ~~403975~~	NA	6	SAA	CL	1.5	PID 12.0 βγ 30
3.0	1055 1-19-95 404056 ~~403975~~	NA	6	Mod stiff 10YR 4/4 - Dark Yellowish Brown Trace Gray mottling silty clay with 10% course sand + trace of fine gravel med. plast. slightly moist.	CL	.75	PID 12.0 βγ 30

INSTRUMENT	BACKGROUND	DATE	TIME
PID	12.0	1/19/95	1040
ALPHA	NA	NA	NA
BETA / GAMMA	30	1/19/95	1040

NOTES: None

SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94)

CONTROL NO.: 500332-31550-009

FEMP
LITHOLOGIC LOG

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES:

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
3.5							
4.0	1055 1-19-95 404056 ~~403975~~ KG 1-19-95	NA	6	SAA	CL	.75	PID 12.0 βγ 38
4.5	1100 1-19.95 404057 ~~403976~~ KG 1-19-95	NA	6	Very stiff 10YR 5/3 Brown with Gray mottling silty clay with 15% corse sand a trace of fine gravel slow to med. plast. slightly moist.	CL	4.0	PID 28 βγ 30
5.0	1100 1-19.95 404057 ~~403976~~ KG 1-19-95	NA	6	SAA	CL	4.0	PID 28 βγ 30
5.5	1100 1-19.95 404057 ~~403976~~ KG 1-19-95	NA	6	SAA	CL	4.0	PID 28 βγ 30
6.0	1100 1-19.95 404057 ~~403976~~ KG 1-19-95	NA	6	Very stiff 10YR 5/3 Brown with Gray mottling silty clay with 20% sand med. trace of fine gravel	CL	4.0	PID 28 βγ 30
6.5	1100 1-19.95 404057 ~~403976~~ KG 1-19-95	NA	6	SAA with a trace corse gravel	CL	4.0	PID 28 βγ 30
7.0	1100 1-19.76 404057 ~~403976~~ KG 1-19-95	NA	6	SAA	CL	4.0	PID 28 βγ 30

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See log		
ALPHA	NA	NA	NA
BETA / GAMMA	See log		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G:/WPSC/94-778.DRW (11-23-94)

CONTROL NO.: 500332-31550-010

FEMP
LITHOLOGIC LOG

PAGE 3 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.0	1105 1-19-95 404058 ~~403977~~	NA	6	Very Stiff 10YR 4/4 Dark yellowish brown silty clay 15% corse sand trace of fine gravel med. Plast slightly moist.	CL	3.5	PiD 30 Bγ 40
7.5	1105 1-19-95 404058 ~~403977~~	NA	6	SAA	CL	3.5	PiD 30 Bγ 40
8.0	1105 1-19-95 404058 ~~403977~~	NA	6	SAA	CL	3.5	PiD 30 Bγ 40
8.5	1105 1-19-95 404058 ~~403977~~	NA	6	SAA	CL	3.5	PiD 30 Bγ 40
9.0	1105 1-19-95 404058 ~~403977~~	NA	6	Very Stiff 10YR 4/4 Dark yellowish Brown with 5Y 4/1 Dark Gray mottling silty clay with 15% corse sand + Trace of fine gravel med. Plast.	CL	3	PiD 30 Bγ 40
9.5	1105 1-19-95 404058 ~~403977~~	NA	6*	SAA	CL	3	PiD 30 Bγ 40
10.0	1105 1-19-95 404058 ~~403977~~	NA	6	SAA	CL	3	PiD 30 Bγ 40
10.5	1105 1-19-95 404058 ~~403977~~	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G:/WPSC/94-776.DRW (11-23-94)

CONTROL NO.: 500332-31550-011	FEMP LITHOLOGIC LOG	PAGE 4 OF 54

PROJECT NAME: South Field Pump Test	PROJECT NO.: 50.03.32

BORING NUMBER: 31550	COORDINATES: NA	RELATED FAL NO.s: NA

SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE STARTED: 1/19/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
10.5	1105 1-19-95 404058 ~~403977~~	NA	6	SAA	CL	3	PID 30 Bγ 40
11.0	1105 1-19-95 404058 ~~403977~~	NA	6	SAA	CL	3 ~~1.5~~ KR 1/14/95	PID 30 Bγ 40
11.5	1105 1-19-95 404058 ~~403977~~	NA	6	Stiff 5Y 4/1 Dark Gray silty clay with 15% coarse sand & trace of fine Gravel med. Plast. slightly moist.	CL	1.5	PID 30 Bγ 40
12.0	1110 1-19-95 404059 ~~403978~~	NA	6	Stiff 5Y 4/1 Dark Gray silty clay with 20% coarse sand 10% fine Gravel med. Plast. slightly moist	CL	2.0	PID 27 Bγ 50
12.5	1110 1-19-95 404059 ~~403978~~	NA	6	SAA	CL	1.0	PID 27 Bγ 50
13.0	1110 1-19-95 404059 ~~403978~~	NA	6	SAA	CL	1.0	PID 27 Bγ 50
13.5	1110 1-19-95 404059 ~~403978~~	NA	6	SAA	CL	1.0	PID 27 Bγ 50
14.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: none

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881 000052

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-012

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550.

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
14.0							
14.5	1110 1-19-95 404059 403978	NA	6	very stiff 5Y 4/1 Dark Gray silty clay with 10YR 4/6 Dark Yellowish Brown sand seam with 20% coarse sand ~15% fine Gravel med. Plast. slightly moist	CL	3.5	PID 27 Bg 50
15.0	1110 1-19-95 404059 403979	NA	6	very stiff 5Y 4/1 Dark Gray silty clay with 25% coarse sand with 10% fine Gravel med. Plast. slightly moist	CL	3.75	PID 27 Bg 50
15.5	1110 1-19-95 404059 403980	NA	6	SAA	CL	3.75	PID 27 Bg 50
16.0	1110 1-19-95 404059 403981	NA	6	very stiff 5Y 4/1 Dark Gray silty clay with 20% coarse sand 10% fine gravel med. Plast. slightly moist	CL	2.5	PID 27 Bg 50
16.5	1110 1-19-95 404059 403982	NA	6	SAA	CL	2.5	PID 27 Bg 50
17.0	1110 1-19-95 404059 403978	NA	6	Hard 10Y 4/2 Dark Grayish Brown silty clay with 15% coarse sand a trace of fine gravel med. to low plast. slightly moist to Dry.	CL	4.5	PID 27 Bg 50 crust sample
17.5	1115 1-19-95 403979	NA	6	10YR 4/4 Dark yellowish Brown well graded sand with trace of fine gravel slightly moist to Dry.	SW	NA	PID 27 Bg 50. 20012615 siem

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-013

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
17.5							
18.0	1115 1-19-95 403979	NA	6	SAA	SW	NA	PID 7.0 Bγ 50
18.5	1115 1-19-95 403979	NA	6	SAA	SW	NA	PID 7.0 Bγ 50
19.0	1115 1-19-95 403979	NA	6	SAA	SW	NA	PID 7.0 Bγ 50
19.5	1115 1-19-95 403979	NA	6	SAA	SW	NA	PID 7.0 Bγ 50
20.0	1115 1-19-95 403979	NA	6	SAA	SW	NA	PID 7.0 Bγ 50
20.5	1115 1-19-95 403979	NA	6	10YR 4/3 Brown Poorly ~~Graded~~ graded Sand with 10% fine gravel ~~wet~~ dry KR 1/19/95 1-19-95	SP	NA	PID 7.0 Bγ 50
21.0	1115 1-19-95 403979	NA	6	SAA	SP	NA	PID 7.0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-014

PAGE 7 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fortner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
21.0							
21.5	1115 1-19-95 403979	NA	6	SAA	SP	NA	PID 7.0 Bγ 50
22.0	1115 1-19-95 403979	NA	6	SAA	SP	NA	PID 7.0 Bγ 50
22.5	1230 1-19-95 403980	NA	6	10YR 3/4 Dark yellowish Brown Poorly Graded sand with Trace of fine gravel slightly moist	SP	NA	PID 5.0 Bγ 50
23.0	1230 1-19-95 403980	NA	6	SAA	SP	NA	PID 5.0 Bγ 50
23.5	1230 1-19-95 403980	NA	6	SAA	SP	NA	PID 5.0 Bγ 50
24.0	1230 1-19-95 403980	NA	6	SAA	SP	NA	PID 5.0 Bγ 50
24.5	1230 1-19-95 403980	NA	6	SAA	SP	NA	PID 5.0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3861

G:/WPSC/94-776.DRW (11-23-94)

CONTROL NO.: 500332-31550-015

FEMP

LITHOLOGIC LOG

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.3.2

BORING NUMBER: 31550.

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.5							
25.0	1230 1-19-95 403980	NA	6	SAA	SP	NA	PID 5.0 Bg 50
25.5	1230 1-19-95 403981	NA	6	10YR 4/3 Dark Brown Poorly Graded sand med. with trace of fine gravel slightly moist to moist	SP	NA	PID 2.5 Bg 50 Sieve 200126.1
26.0	1230 1-19-95 403981	NA	6	SAA	SP	NA	PID 2.5 Bg 50
26.5	1230 1-19-95 403981	NA	6	SAA	SP	NA	PID 2.5 Bg 50
27.0	1230 1-19-95 403981	NA	6	SAA	SP	NA	PID 2.5 Bg 50
27.5	1230 1-19-95 403981	NA	6	SAA	SP	NA	PID 2.5 Bg 50
28.0	1235 1-19-95 403981	NA	6	SAA	SP	NA	PID 2.5 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-016

PAGE 9 OF 59

PROJECT NAME: South Field Pump Test

PROJECT NO.: 30.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
28.0							
28.5	1230 1-19-95 403981	NA	6	10YR 4/3 Dark Brown Poorly Graded Sand with fine to coarse Gravel ~~Plast~~ Clast to 2 1/2" Rounded Slightly moist - moist	SP	N/A	PID 2.5 Bγ 50 Sieve 20012618
29.0	1230 1-19-95 403981	NA	6	SAA	SP	N/A	PID 2.5 Bγ 50
29.5	1245 1-19-95 403982	NA	6	10YR 4/3 Brown well Graded Sand with 15% fine gravel subangular to Rounded Dry	SW	N/A	PID 2.5 Bγ 50
30.0	1245 1-19-95 403982	NA	6	SAA	SW	N/A	PID 2.5 Bγ 50
30.5	1245 1-19-95 403982	NA	6	10YR 5/8 Yellowish Brown well Graded Sand with a trace of fine Gravel sub. to Rounded Dry	SW	N/A	PID 2.5 Bγ 50
31.0	1245 1-19-95 403982	NA	6	SAA	SW	N/A	PID 2.5 Bγ 50
31.5	1245 1-19-95 403982	NA	6	SAA with cobble 3"x2"x1"	SW	N/A	PID 2.5 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-017

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550.

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/24/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Blower/Faulkner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.5							
32.0	1245 1-19-95 403982	NA	6	2.5Y 4/2 Dark Grayish Brown well Graded Sand with trace of fine Gravel Sub rounded Dry	SW	N/A	P.D 2.0 Bg 50
32.5	1245 1-19-95 403982	NA	6	2.5Y 4/2 ~~Light~~ Dark Brownish Gray Poorly Graded fine sand with 20% fine Gravel Sub. to rounded Dry	SP	NA	P.D 2.0 Bg 50 Polverized Rock
33.0	1245 1-19-95 403982	NA	6	SAA	SP	NA	P.D 2.0 Bg 50
33.5	NA	NA	NA	NR	NA	NA	P.D Bg NA
34.0	NA	NA	NA	NR	NA	NA	P.D Bg NA
34.5	NA	NA	NA	NR	NA	NA	P.D Bg NA
35.0	NR	NA	NA	NR	NR	NR	P.D Bg NA

INSTRUMENT	BACKGROUND	DATE	TIME
PID	522 ppl		
ALPHA	NA	NA	NA
BETA / GAMMA	524 ppl		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.:	500332-31550-018
PAGE	11 OF 54
PROJECT NAME:	South Field Pump Test
PROJECT NO.:	50.03.32
BORING NUMBER:	31550
COORDINATES:	NA
RELATED FAL NO.s:	NA
SURFACE ELEVATION:	NA
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE STARTED:	1/19/95
GEOLOGIST:	Ken Geiger
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE COMPLETED:	1/27/95
WATER USED DURING DRILLING:	2065 gal
DRILLING CONTRACTOR:	Alliance
DRILLING EQUIPMENT:	Rotosonic
DRILLER / HELPER:	Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
35.0							
35.5	N/A	NA	N/A	NR	N/A	NA	P.D Bγ NA
36.0	N/A	NA	N/A	NR	NA	NA	P.D Bγ NA
36.5	N/A	NA	N/A	NR	NA	NA	P.D Bγ NA
37.0	N/A	NA	N/A	NR	NA	NA	P.D Bγ NA
37.5	N/A	NA	N/A	NR	NA	NA	P.D Bγ NA
38.0	N/A	NA	N/A	NR	NA	NA	P.D Bγ NA
38.5	N/A	NA	N/A	NR	NA	NA	P.D Bγ NA

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-019

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50,03,32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
38.5							
39.0	NA	NA	NA	NR	NA	NA	P.D Bg NA
39.5	NA	NA	0	NR	NA	NA	P.D Bg NA
40.0	NA	NA	0	NR	NA	NA	P.D Bg NA
40.5	NA	NA	0	NR	NA	NA	P.D Bg NA
41.0	NA	NA	0	NR	NA	NA	P.D Bg NA
41.5	NA	NA	0	NR	NA	NA	P.D Bg NA
42.0	NA	NA	0	NR	NA	NA	P.D Bg NA

INSTRUMENT	BACKGROUND	DATE	TIME
PID	5 ppm		
ALPHA	NA	NA	NA
BETA / GAMMA	5 ppm		

NOTES: NANE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-020	PAGE 13 OF 54
PROJECT NAME: South Field Pump Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31550	COORDINATES: NA
RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE STARTED: 1/19/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE COMPLETED: 1/27/95
WATER USED DURING DRILLING: 2065 gal.	DRILLING CONTRACTOR: Alliance / DRILLING EQUIPMENT: Rotosonic / DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
42.0							
42.5	NA	NA	0	NR	NA	NA	P.D Bg NA
43.0	NA	NA	0	NR	NA	NA	P.D Bg NA
43.5	NA	NA	0	NR	NA	NA	P.D Bg NA
44.0	NA	NA	0	NR	NA	NA	P.D Bg NA
44.5	NA	NA	0	NR	NA	NA	P.D Bg NA
45.0	NA	NA	0	NR	NA	NA	P.D Bg NA
45.5	NA	NA	0	NR	NA	NA	P.D Bg NA

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-021

PROJECT NAME: South field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fortner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
45.5							
46.0	NA	NA	0	NR	NA	NA	PID NA By
46.5	NA	NA	0	NR	NA	NA	PID NA By
47.0	NA	NA	0	NR	NA	NA	PID NA By 40
47.5	1430 1-19-95 403983	NA	6	2.5Y 4/2 Dark Grayish Brown well Graded Sand with Trace of Fine Gravel Sub Rounded wet (Probably Drilling Fluid)	SW	NA	PID 1.5 By 40 Sieve 20012618Y
48.0	1430 1-19-95 403983	NA	6	2.5Y 4/2 Dark Grayish Brown well Graded Sand with a Trace of fine Gravel Sub. To Rounded wet (Drilling Fluid)	SW	NA	PID 1.5 By 40 Roll 2
48.5	1435 1-19-95 403984	NA	6	SAA	SW	NA	PID 1.5 By 40
49.0	1435 1-19-95 403984	NA	6	SAA with cobble 3"x2"x1" and some Gravel	SW	NA	PID 1.5 By 40

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-022

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
49.0	1435 1-19-95 403984	NA	6	10YR 5/2 Grayish Brown well graded sand with some fine gravel Rounded Dry Trace of Clay + Silt	SW	N/A	P.D 1.5 Bg 40
50.0	1435 1-19-95 403984	NA	6	SAA with more clay + silt	SW	N/A	P.D 1.5 Bg 40
50.5	1435 1-19-95 403984	NA	6	10YR 4/2 Dark Grayish Brown Poorly graded fine sand Trace of fine gravel Dry	SP	N/A	P.D 1.5 Bg 40
51.0	1435 1-19-95 403984	NA	6	SAA	SP	N/A	P.D 1.5 Bg 40
51.5	1435 1-19-95 403984	NA	6	SAA	SP	N/A	P.D 1.5 Bg 40
52.0	1435 1-19-95 403984	NA	6	SAA	SP	N/A	P.D 1.5 Bg 40
52.5	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A

INSTRUMENT	BACKGROUND	DATE	TIME
PID	5.2 ppl		
ALPHA	NA	NA	NA
BETA / GAMMA	9.2 cpl		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-023

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
52.5							
53.0	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A
53.5	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A
54.0	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A
54.5	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A
55.0	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A
55.5	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A
56.0	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: none

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-024

PAGE 17 of 54

PROJECT NAME: South Field Pump Test			PROJECT NO.: K61/24/95 ~~50.033~~ 50.033
BORING NUMBER: 31550	COORDINATES: NA	RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE STARTED: 1/19/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE COMPLETED: 1/27/95
WATER USED DURING DRILLING: 2065 gal.	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fountner	

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
56.0							
56.5	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A
57.0	N/A	NA	0	NR	N/A	N/A	P.D Bg N/A
57.5	1030 1-20-95 403982	NA	6	10YR 4/3 Dark Brown Poorly Graded med. Sand with Trace of fine gravel Rounded moist	SP	N/A	P.D 0 Bg 50 Sieve 2001 2618
58.0	1030 1-20-95 403955	NA	6	SAA	SP	N/A	P.D 0 Bg 50
58.5	1030 1-20-95 403985	NA	6	SAA	SP	N/A	P.D 0 Bg 50
59.0	1030 1-20-95 403990	NA	6	SAA	SP	N/A	P.D 0 Bg 50
59.5	1035 1-20-95 403996	NA	6	10YR 4/2 Dark Grayish Brown well Graded Gravelly-Sand Rounded moist	SW	N/A	P.D 0 Bg 50 Sieve

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: K61/24/95
~~NOTES~~
59.5' - 60.0' Sand
59.0 - 59.5'

FEMP

LITHOLOGIC LOG

CONTROL NO.: 50 0332-31550-025

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50,03,32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
60.0	1035 1-20-95 403986	NA	6	10YR 4/2 Dark Grayish Brown Poorly Graded med. Sand with Trace of fine gravel moist	SP	N/A	P.D O Bg 50 Sieve 20012688
60.5	1035 1-20-95 403986	NA	6	SAA	SP	N/A	P.D O Bg 50
61.0	1035 1-20-95 403986	NA	6	SAA	SP	N/A	P.D O Bg 50
61.5	1035 1-20-95 403986	NA	6	10YR 4/2 Dark Grayish Brown well Graded gravel-sand moist	SW	N/A	P.D O Bg 50 Sieve 20012619
62.0	1040 1-20-95 403987	NA	6	SAA Less Gravel	SW	N/A	P.D O Bg 50
62.5	1040 1-20-95 403987	NA	6	SAA Less Gravel	SW	N/A	P.D O Bg 50
63.0	1040 1-20-95 403987	NA	6	10YR 4/2 Dark Grayish Brown Poorly Graded fine to medium sand Trace of Gravel moist	SP	N/A	P.D O Bg 50
63.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-026

PAGE 19 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
63.5	1040 1-1995 403987	NA	6	10YR 4/2 Dark Grayish Brown very clayey sand Poorly Graded Trace of fine Gravel moist	SP	N/A	PID 0 Bγ 50
64.0	1040 1-19-95 403987	NA	6	10YR 4/2 Dark Grayish Brown Poorly Graded fine sand with some fine to Coarse Gravel Moist	SP	N/A	PID 0 Bγ 50
64.5	1040 1-19-95 403987	NA	6	SAA	SP	N/A	PID 0 Bγ 50
65.0	1040 1-19-95 403987	NA	6	SAA	SP	N/A	PID 0 Bγ 50
65.5	1040 1-19-95 403987	NA	6	SAA	SP	N/A	PID 0 Bγ 50
66.0	1040 1-19-95 403987	NA	6	SAA	SP	N/A	PID 0 Bγ 50
66.5	1040 1-19-95 403987	NA	6	SAA	SP	N/A	PID 0 Bγ 50
67.0	1040 1-19-95 403987	NA	6	SAA	SP	N/A	PID 0 Bγ 50 Total 200126189 Silver 200126911

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 1	

NOTES: none

CONTROL NO.: 500332-31550-027

FEMP
LITHOLOGIC LOG

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Lotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
67.0	1310 1-20-95 403988	NA	6	10YR 4/2 Dark Grayish Brown Graded sand with some fine Gravel moist (KE 1-20-95 well)	SW	N/A	P.D 0 Bγ 50 TO+4 HNO3 200126146 1/2
67.5	1310 1-20-95 403988	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
68.0	1310 1-20-95 403988	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
68.5	1310 1-20-95 403988	NA	6	SAA with larger Gravel (1inch)	SW	N/A	P.D 0 Bγ 50
69.0	1315 1-20-95 403989	NA	6	SAA with cobble 2x3 x 1/2"	SW	N/A	P.D 0 Bγ 50
69.5	1315 1-20-95 403989	NA	6	10YR 4/2 Dark Grayish Brown well Graded sand with some fine Gravel moist (KE 1-20-95)	SW	N/A	P.D 0 Bγ 50
70.0	1315 1-20-95 403989	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
70.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-028

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
70.5	1315 1-20-95 403989	NA	6	SAA	SW	N/A	P.D 0 Bg 50
71.0	1315 1-20-95 403989	NA	6	SAA	SW	N/A	P.D 0 Bg 50
71.5	1315 1-20-95 403989	NA	6	SAA	SW	N/A	P.D 0 Bg 50
72.0	1320 1-20-95 403990	NA	6	10YR 4/2 Dark ~~Gray~~ grayish Brown 1-20-95 Poorly Graded fine sand with some fine Gravel moist	SP	N/A	P.D 0 Bg 50
72.5	1320 1-20-95 403990	NA	6	SAA	SP	N/A	P.D 0 Bg 50
73.0	1320 1-20-95 403990	NA	6	10YR 4/2 Dark Grayish Brown well Graded Sand with fine Gravel moist (Slightly more Gravel 72-72½)	SW	N/A	P.D 0 Bg 50
73.5	1320 1-20-95 403990	NA	6	SAA	SW	N/A	P.D 0 Bg 50
74.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-029

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.22

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
74.0	1320 1-20-95 403990	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
74.5	1320 1-20-95 403990	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
75.0	1320 1-20-95 403990	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
75.5	1320 1-20-95 403990	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
76.0	1320 1-20-95 403990	NA	6	10YR 4/2 Dark Grayish Brown well graded clayey sand with fine gravel moist	SW	N/A	P.D 0 Bγ 50
76.5	1320 1-20-95 403990	NA	6	SAA	SW	N/A	P.D 0 Bγ 50 Sieve 20012619 TO+4 20012 TO+4 HNO3 20012614
77.0	1415 1-20-95 403991	NA	6	10YR 4/2 Dark Grayish Brown well graded sand with fine to coarse gravel wet	SW	N/A	P.D 0 Bγ 50
77.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	1/20/95	1320
ALPHA	NA	NA	NA
BETA / GAMMA	50	1/20/95	1320

NOTES: Name

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-030

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Foulkner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
77.5	~~1415~~ 1415 ~~1420~~ 1-20-95 403991 ~~403992~~	NA	6	SAA	SW	N/A	P.D 0 Bg 50 KG
78.0	1420 1-20-95 403992	NA	6	10YR 4/2 Dark Grayish Brown well graded sand with 20% fine gravel + a trace of coarse gravel wet	SW	N/A	P.D 0 Bg 50 20012619
78.5	1420 1-20-95 403992	NA	6	SAA	SW	N/A	P.D 0 Bg 50
79.0	1420 1-20-95 403992	NA	6	10YR 4/2 Dark Grayish Brown Poorly Graded fine sand with a trace of fine gravel	SP	N/A	P.D 0 Bg 50
79.5	1420 1-20-95 403992	NA	6	SAA	SP	N/A	P.D 0 Bg 50
80.0	1420 1-20-95 403992	NA	6	10YR 4/2 Dark Grayish Brown Poorly graded fine sand Trace of fine gravel Trace of ~~fine~~ coarse gravel	SP	N/A	P.D 0 Bg 50 20012619
80.5	1420 1-20-95 403992	NA	6	SAA	SP	N/A	P.D 0 Bg 50
81.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 21		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg. 21		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-031

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
81.0	1420 1-20-95 403992	NA	6	10YR 4/2 Dark grayish Brown well graded sand with a trace of coarse gravel wet	SW	N/A	P.D.O Bg 50
82.0	1420 1-20-95 403992	NA	6	SAA	SW	N/A	P.D.O Bg 50
82.5	1425 1-20-95 403993	NA	6	10YR 4/2 Dark Grayish Brown well graded sand with 20% fine gravel wet	SW	N/A	P.D.O Bg 50
83.0	1425 1-20-95 403993	NA	6	SAA	SW	N/A	P.D.O Bg 50
83.5	1425 1-20-95 403993	NA	6	10YR 4/2 Dark Grayish Brown well graded sand with 20% fine gravel wet	SW	N/A	P.D.O Bg 50
84.0	1425 1-20-95 403993	NA	6	SAA	SW	N/A	P.D.O Bg 50
84.5	1425 1-20-95 403993	NA	6	SAA	SW	N/A	P.D.O Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 21		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 21		

NOTES: None

000072

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-032

PAGE 252 of 312 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50, 03, 32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.: Na

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
84.5	1425 1-20-95 403993	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
85.0	1425 1-20-95 403993	NA	6	10YR 4/2 Dark grayish Brown well graded sand Trace of fine gravel	SW	N/A	P.D 0 Bγ 50
85.5	1425 1-20-95 403993	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
86.0	1425 1-20-95 403993	NA	6	10YR 4/2 Dark grayish Brown well graded sand with a Trace of clay and fine gravel	SW	N/A	P.D 0 Bγ 50
86.5	1425 1-20-95 403993	NA	6	SAA	SW	N/A	P.D 0 Bγ 50 TOT 4 20012619 TOTAL 20012619 Bγ 50 Bγ 20012619
87.0	1330 1-23-95 403994	NA	6	10YR 4/2 Dark Grayish Brown well Graded sand with some coarse Gravel wet	SW	N/A	P.D 0 Bγ 50
87.5	1330 1-23-95 403994	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
88.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 21		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 21		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-033

PAGE 26 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
88.0	1335 1-23-95 403994 ~~403995~~	NA	6	10YR 4/2 Dark Grayish Brown Poorly Graded med. sand with some fine gravel moist	SP	N/A	P.D.O Bγ50
88.5	1335 1-23-95 403994 ~~403995~~	NA	6	SAA	SP	N/A	P.D.O Bγ50
89.0	1335 1-23-95 403994 ~~403995~~	NA	6	SAA	SP	N/A	P.D.O Bγ50
89.5	1335 1-23-95 403994 ~~403995~~	NA	6	SAA	SP	N/A	P.D.O Bγ50
90.0	1335 1-23-95 403994 ~~403995~~	NA	6	SAA	SP	N/A	P.D.O Bγ50
90.5	1335 1-23-95 403994 ~~403995~~	NA	6	10YR 4/2 Dark Grayish Brown Well graded sand with some fine gravel moist	SW	N/A	P.D.O Bγ50
91.0	1335 1-23-95 403994 ~~403995~~	NA	6	SAA	SW	N/A	P.D.O Bγ50
91.5	1335 1-23-95 403994 ~~403995~~	NA	6	SAA	SW	N/A	P.D.O Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	1/23/95	1330
ALPHA	NA	NA	NA
BETA / GAMMA	50	1/23/95	1330

NOTES: None

000074

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-034

PAGE 272 3-13-95 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
91.5	1335 1-23-95 403994 ~~403995~~	NA	6	SAA	SW	N/A	PiD 0 Bγ 50 Sieve 20012620
92.0	1340 1-23-95 403996	NA	6	SAA	SW	N/A	PiD 0 Bγ 50 2011.3
92.5	1340 1-23-95 403996	NA	6	SAA	SW	N/A	PiD 0 Bγ 50
93.0	1340 1-23-95 403996	NA	6	SAA	SW	N/A	PiD 0 Bγ 50
93.5	1340 1-23-95 403996	NA	6	SAA	SW	N/A	PiD 0 Bγ 50
94.0	1340 1-23-95 403996	NA	6	SAA	SW	N/A	PiD 0 Bγ 50
94.5	1340 1-23-95 403996	NA	6	SAA	SW	N/A	PiD 0 Bγ 50
95.0	1340 1-23-95 403996	NA	6	SAA	SW	N/A	PiD 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 25		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 25		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-035

PAGE 28 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
95.0	1340 1-23-95 403996	NA	6	10YR 4/2 Dark Grayish Brown well graded sand with some clay some fine to coarse gravel wet	SW	N/A	P.D 0 Bg 50
95.5	1340 1-23-95 403996	NA	6	SAA	SW	N/A	P.D 0 Bg 50
96.0	1340 1-23-95 403996	NA	6	SAA	SW	N/A	P.D 0 Bg 50
96.5	1340 1-23-95 403996	NA	6	SAA	SW	N/A	P.D 0 Bg 50 Tot. 200126 Tot 200126195 Sieve 20012620
97.0	1500 1-23-95 403997	NA	6	10YR 4/2 Dark Grayish Brown well Graded Gravelly ~~with some~~ Sand with some large gravel over 1" moist KG 1/23/95	SW ~~GW~~ KG 1/23/95 ~~SW~~ KG 1-23-95	N/A	P.D 0 Bg 60
97.5	1500 1-23-95 403997	NA	6	SAA	SW	N/A	P.D 0 Bg 60 Sieve 20012620
98.0	1500 1-23-95 403997	NA	6	SAA	SW	N/A	P.D 0 Bg 60
98.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 25		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 25		

NOTES: None

000076

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-036	PROJECT NAME: South Field Pump Test
PROJECT NO.: 50.03.32	
BORING NUMBER: 31550	COORDINATES: NA
RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA
DATE STARTED: 1/19/95	
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA
DATE COMPLETED: 1/27/95	
WATER USED DURING DRILLING: 2065 gal.	DRILLING CONTRACTOR: Alliance
DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
98.5	1500 1-23-95 403997	NA	6	SAA	SW	N/A	P.D 0 Bg 60
99.0	1500 1-23-95 403997	NA	6	SAA	SW	N/A	P.D 0 Bg 60
99.5	1500 1-23-95 403997	NA	6	SAA	SW	N/A	P.D 0 Bg 60
100.0	1500 1-23-95 403997	NA	6	SAA	SW	N/A	P.D 0 Bg 60
100.5	1500 1-23-95 403997	NA	6	SAA	SW	N/A	P.D 0 Bg 60
101.0	1500 1-23-95 403997	NA	6	SAA	SW	N/A	P.D 0 Bg 60
101.5	1500 1-23-95 403997	NA	6	10YR 4/2 Dark Grayish Brown Poorly Graded med. sand with some fine gravel	SP	N/A	P.D 0 Bg 60
102.0	1500 1-23-95 403997	NA	6	SAA	SP	N/A	P.D 0 Bg 60 Screen 200126

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 25		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 25		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-037

PROJECT NAME: South Field Pump Test

PROJECT NO.: 500332

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/14/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
102.0				KR 1/24/95			
	1015 1-24-95 403998	NA	6	10YR 4/1 Dark Gray poorly graded med. sand with some trace of fine gravel wet	SP	N/A	P.D 0 Bg 50
102.5	1015 1-24-95 403998	NA	6	SAA	SP	N/A	P.D 0 Bg 50
103.0	1015 1-24-95 403998	NA	6	SAA	SP	N/A	P.D 0 Bg 50
103.5	1015 1-24-95 403998	NA	6	SAA	SP	N/A	P.D 0 Bg 50
104.0	1020 1-24-95 403999	NA	6	10YR 4/1 Dark Gray well graded sand with some fine gravel wet	SW	N/A	P.D 0 Bg 50
104.5	1020 1-24-95 403999	NA	6	SAA	SW	N/A	P.D 0 Bg 50
105.0	1020 1-24-95 403999	NA	6	SAA	SW	N/A	P.D 0 Bg 50
105.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0 0	1/24/95	1015
ALPHA	NA	NA	NA
BETA / GAMMA	50	1/24/95	1015

NOTES: None

CONTROL NO.: 500332-31550-038	FEMP LITHOLOGIC LOG	JC 31 3-13-95 PAGE 30 OF 54

PROJECT NAME: South Field Pump Test			PROJECT NO.: 50.03.32
BORING NUMBER: 31550	COORDINATES: NA	RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE STARTED: 1/19/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE COMPLETED: 1/27/95
WATER USED DURING DRILLING: 2065 gal.	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
105.5	1020 1-24-95 403999	NA	6	10YR 4/1 Dark Gray well graded Sand with some fine gravel wet	SW	N/A	PiD 0 Bγ 50
106.0	1020 1-24-95 403999	NA	6	SAA	SW	N/A	PiD 0 Bγ 50
106.5	1020 1-24-95 403999	NA	6	SAA with a trace of coarse ~~gr~~ gravel KL 1/24/95	SW	N/A	PiD 0 Bγ 50 Tot L. 200126150 GW Tot L. 200126198 Sieve 200126 20
107.0	1020 1-24-95 403999	NA	6	SAA	SW	N/A	PiD 0 Bγ 50 Sieve 200126 20 1-24-95
107.5	1020 1-24-95 403999	NA	6	SAA	SW	N/A	PiD 0 Bγ 50
108.0	1025 1-24-95 404000	NA	6	10YR 4/1 Dark Gray Poorly Graded med. sand with some fine gravel	SP ~~SW~~ KL 1/24/95	N/A	PiD 0 Bγ 50
108.5	1025 1-24-95 404000	NA	6	SAA	SP	N/A	PiD 0 Bγ 50
109.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 24		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 24		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-039

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: 31550

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
109.0	1025 1·24·95 404000	NA	6	10YR 4/1 Dark Gray well graded Sand with some fine gravel to a trace of coarse gravel wet	SW	N/A	P.D 0 Bγ 50
109.5	1025 1·24·95 404000	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
110.0	1025 1·24·95 404000	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
110.5	1025 1·24·95 404000	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
111.0	1025 1·24·95 404000	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
111.5	1025 1·24·95 404000	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
112.0	1025 1·24·95 404000	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
112.5	1025 1·24·95 404000	NA	6	SAA	SW	N/A	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 29		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 29		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-040

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.:

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/14/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
112.5							
	1025 1-24-95 404000	NA	6	SAA	SW	N/A	P.D 0 Bg 50
113.0							
	1025 1-24-95 404000	NA	6	SAA	SW	N/A	P.D 0 Bg 50
113.5							
	1025 1-24-95 404000	NA	6	SAA	SW	N/A	P.D 0 Bg 50
114.0							
	1025 1-24-95 404000	NA	6	SAA	SW	N/A	P.D 0 Bg 50
114.5							
	1025 1-24-95 404000	NA	6	SAA	SP	N/A	P.D 0 Bg 50
115.0							
	1025 1-24-95 404000	NA	6	10YR 4/1 Dark Gray Poorly Graded med. sand with some fine gravel - a trace of coarse gravel wet	SP	N/A	P.D 0 Bg 50
115.5							
	1025 1-24-95 404000	NA	6	SAA	SP	N/A	P.D 0 Bg 50
116.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	Spi	Jan 24	
ALPHA	NA	NA	NA
BETA / GAMMA	Spi	Jan 24	

NOTES: None

CONTROL NO.: 500332-31550-041

FEMP

LITHOLOGIC LOG

JC 3-13-95 34

PAGE 33 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
116.0							
116.5	1025 1-24-95 404000	NA	6	SAA	SP	N/A	P.D 0 Bγ 50
117.0	1025 1-24-95 404000	NA	6	SAA	SP	N/A	P.D 0 Tot 200126 Bγ 50 Tot 200126200 Sieve 200126211
117.5	1405 1-24-95 404001	NA	6	10YR 4/1 Dark Gray well graded sand with some coarse Gravel wet	SW	N/A	P.D 0 Bγ 50
118.0	1405 1-24-95 404001	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
118.5	1405 1-24-95 404001	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
119.0	1405 1-24-95 404001	NA	6	SAA	SW	NA	P.D 0 Bγ 50
119.5	1405 1-24-95 404001	NA	6	SAA	SW	NA	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 24	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 24	

NOTES: None

000082

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550 — 042

PAGE 34 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE:

TIME: NA

DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER/HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
119.5							
120.0	1405 1-24-95 404001	NA	6	SAA	SW	NA	PiDO Bγ50
120.5	1405 1-24-95 404001	NA	6	10YR 4/1 Dark Gray well Graded Sand with some fine to Coarse Gravel with cobbles 3" to 3 1/2" wet	SW ~~SP~~ KG 1-24-95	N/A	PiDO Bγ50
121.0	1405 1-24-95 404001	NA	6	SAA	SW ~~SP~~ KG 1-24-95	NA	PiDO Bγ50
121.5	1405 1-24-95 404001	NA	6	SAA	SW ~~SP~~ KG 1-24-95	NA	PiDO Bγ50
122.0	1405 1-24-95 404001	NA	6	SAA	SW ~~SP~~ KG 1-24-95	NA	PiDO Bγ50
122.5	1410 1-24-95 404002	NA	6	SAA	SW ~~SP~~ KG 1-24-95	NA	PiDO Bγ50
123.0	1410 1-24-95 404002	NA	6	SAA with out cobbles	SW ~~SP~~ KG 1-24-95	NA	PiDO Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See fig 24		
ALPHA	NA	NA	NA
BETA / GAMMA	See fig 26		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-043

JC 3-13-95 PAGE 36 ~~35~~ OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES:

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
123.0	1410 1-24-95 404002	NA	6	10YR 4/1 Dark Gray Poorly Graded sand with some fine gravel wet	SP	NA	P.D 0 Bγ 50
123.5	1410 1-24-95 404002	NA	6	SAA	SP	NA	P.D 0 Bγ 50
124.0	1410 1-24-95 404002	NA	6	SAA	SP	NA	P.D 0 Bγ 50
124.5	1410 1-24-95 404002	NA	6	SAA	SP	NA	P.D 0 Bγ 50
125.0	1410 1-24-95 404002	NA	6	SAA	SP	NA	P.D 0 Bγ 50
125.5	1410 1-24-95 404002	NA	6	SAA	SP	NA	P.D 0 Bγ 50
126.0	1410 1-24-95 404002	NA	6	10YR 4/1 Dark Gray Poorly graded fine sand wet	SP	NA	P.D 0 Bγ 50
126.5	1410 1-24-95 404002	NA	6	SAA	SP	NA	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 24		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 24		

NOTES: None

000084

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-044

JC 3-13-95 PAGE 37 ~~36~~ OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
126.5							
	1410 1-24-95 404002	NA	6	SAA	SP	NA	PID 0 TOH 2001261 Bg 50 Tot U. 2001262 Slew
127.0							
	1610 1-24-95 404003	NA	6	10YR 4/1 Dark Gray Poorly Graded coarse sand with a trace of fine Gravel wet	SP	NA	PID 0 Bg 50
127.5							
	1610 1-24-95 404003	NA	6	SAA	SP	NA	PID 0 Bg 50
128.0							
	1610 1-24-95 404003	NA	6	SAA	SP	NA	PID 0 Bg 50
128.5							
	1610 1-24-95 404003	NA	6	SAA	SP	NA	PID 0 Bg 50
129.0							
	1610 1-24-95 404003	NA	6	SAA	SP	NA	PID 0 Bg 50
129.5							
	1610 1-24-95 404003	NA	6	SAA	SP	NA	PID 0 Bg 50
130.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 29		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 29		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-045

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 1/24/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
130.0							
	1610 1·24·95			SAA	SP	NA	P.D 0 Bγ 50
130.5	404003	NA	6				
	1610 1·24·95			SAA	SP	NA	P.D 0 Bγ 50
131.0	404003	NA	6				
	1610 1·24·95			SAA	SP	NA	P.D 0 Bγ 50
131.5	404003	NA	6				
	1610 1·24·95			SAA	SP	NA	P.D 0 Bγ 50
132.0	404003	NA	6				
	1610 1·24·95			SAA	SP	NA	P.D 0 Bγ 50
132.5	404003	NA	6				
	1610 1·24·95			SAA	SP	NA	P.D 0 Bγ 50
133.0	404003	NA	6				
	1610 1·24·95			SAA	SP	NA	P.D 0 Bγ 50
133.5	404003	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 29		
ALPHA	NA	NA	NA
BETA / GAMMA	000086 See pg 29		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550 — 046

PAGE 39 of 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 206.5 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
133.5	1410 1610 1-24-95 404003			SAA	SP	NA	P.D 0 Bγ 50
134.0	404003	NA	6				
134.5	1410 1610 1-24-95 404003	NA	6	10YR 4/1 Dark Gray well Graded Sand with some fine gravel wet	SW	N/A	P.D 0 Bγ 50
135.0	1410 1610 1-24-95 404003	NA	6	SAA	SW	NA	P.D 0 Bγ 50
135.5	1410 1610 1-24-95 404003	NA	6	SAA	SW	NA	P.D 0 Bγ 50
136.0	1410 1610 1-24-95 404003	NA	6	SAA	SW	NA	P.D 0 Bγ 50
136.5	1410 1610 1-24-95 404003	NA	6	10YR 4/2 Dark Grayish Brown Poorly graded with a trace of fine Gravel wet	SP	NA	P.D 0 Bγ 50
137.0	1410 1610 1-24-95 404003	NA	6	SAA	SP	NA	P.D 0 Bγ 50 Sieve

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 24	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 24	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550 —047

JC 3-14-95 PAGE 40 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
137.0	1015 1-25-95 404004	NA	6	2.5Y 3/2 very Dark Grayish Brown Poorly graded med. sand wet	SP	N/A	P.D.O. Bg 50
137.5	1015 1-25-95 404004	NA	6	SAA	SP	N/A	P.D.O. Bg 50
138.0	1015 1-25-95 404004	NA	6	2.5Y 3/2 very Dark Grayish Brown ~~Poorly~~ KR KR 1-25-95 well graded sand with fine gravel & cobble 3"x 1/2" x1"	SW ~~SP~~ KR 1/25/95	N/A	P.D.O. Bg 50
138.5	1015 1-25-95 404004	NA	6	2.5Y ~~SA~~ KR 1/25/95 3/2 very Dark Grayish Brown well graded sand with fine to coarse gravel wet sub. Ang. to well rounded	SW	N/A	P.D.O. Bg 50
139.0	1015 1-25-95 404004	NA	6	very soft 5Y 4/1 Dark Gray Clayey Silt very low plast. to no plast. moist	1-25-95 KR ~~<.25~~ CL	<.25	P.D.O. Bg 50
139.5	1015 1-25-95 404004	NA	6	SAA	CL	<.25	P.D.O. Bg 50
140.0	1015 1-25-95 404004	NA	6	SAA	CL	<.25	P.D.O. Bg 50
140.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	1/25/95	1015
ALPHA	NA	NA	NA
BETA / GAMMA	50	1/25/95	1015

NOTES: NONE

000088

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-048

JC 3-14-95 PAGE 41 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
140.5							
141.0	1015 1-25-95 404004	NA	6	SAA	OL	<.25 1-25-95 NA KR	PiD 0 Bγ 50 Sieve
141.5	1015 1-25-95 404004	NA	6	SAA	OL	1-25-95 KR NA <.25	PiD 0 Bγ 50 ~~Sieve~~
142.0	1015 1-25-95 404004	NA	6	SAA	OL	KR NA 1-25-95 <.25	PiD 0 Bγ 50
142.5	1020 1-25-95 404005	NA	6	SAA	OL	KR NA 1-25-95 <.25	PiD 0 Bγ 50
143.0	1020 1-25-95 404005	NA	6	Very soft SAA with some very fine poorly graded sand 62.5Y 4/3 KR 1-25-95 ~~olive~~ olive brown	OL	<.25	PiD 0 Bγ 50
143.5	1020 1-25-95 404005	NA	6	SAA	OL	<.25	PiD 0 Bγ 50
144.0	1020 1-25-95 404005	NA	6	SAA	OL	<.25	PiD 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 39		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 39		

NOTES: None

000089

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-049

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
144.0	1020 1-25-95 404005	NA	6	very soft 5Y 3/1 very Dark gray silty Clay with a trace of fine Gravel rounded med. to High Plast. moist with some Black Modling with very small gastropods	CL	<.25	P.D 0 Bγ 50
144.5	1020 1-25-95 404005	NA	6	SAA	CL	<.25	P.D 0 Bγ 50
145.0	1020 1-25-95 404005	NA	6	SAA	CL	<.25	P.D 0 Bγ 50
145.5	1020 1-25-95 404005	NA	6	SAA	CL	<.25	P.D 0 Bγ 50
146.0	1020 1-25-95 404005	NA	6	SAA	CL	<.25	P.D 0 Bγ 50
146.5	1020 1-25-95 404005	NA	6	SAA	CL	<.25	P.D 0 Bγ 50
147.0	1340 1-25-95 404006	NA	6	5Y 3/2 Dark olive gray Poorly Graded fine sand, wet	SP	NA	P.D 3 Bγ 50 Roll 4
147.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 39	
ALPHA	NA	NA	NA
BETA / GAMMA	000090 See	pg 39	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-050

PAGE 43 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s:

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
147.5	1340 1-25-95			SAA	SP	NA	P.D 3 Bg 50
148.0	404006	NA	6				
	1340 1-25-95			SAA with some fine gravel	SP	NA	P.D 3 Bg 50
148.5	404006	NA	6				
	1340 1-25-95			SAA	SP	NA	P.D 3 Bg 50
149.0	404006	NA	6				
	1340 1-25-95			SAA	SP	NA	P.D 3 Bg 50
149.5	404006	NA	6				
	1340 1-25-95			SAA	SP	NA	P.D 3 Bg 50
150.0	404006	NA	6				
	1340 1-25-95			SAA	SP	NA	P.D 3 Bg 50
150.5	404006	NA	6				
	1340 1-25-95			SAA	SP	NA	P.D 3 Bg 50
151.0	404006	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	5 ppm	39	
ALPHA	NA	NA	NA
BETA / GAMMA	5 ppm	39	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-051

JC 3-14-95 PAGE 43 OF 54 (44)

PROJECT NAME: South Field Pump Test

PROJECT NO.: 30.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 11/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 11/27/95

WATER USED DURING DRILLING: 2065 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brower/Foulkner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
151.0	1340 1-25-95			SAA	SP	NA	P.D3 B.J50
151.5	404006	NA	6				
152.0	1340 1-25-95 404006	NA	6	SAA	SP	NA	P.D3 B.J50
152.5	1340 1-25-95 404006	NA	6	SAA	SP	NA	P.D3 B.J50
153.0	1340 1-25-95 404006	NA	6	SAA	SP	NA	P.D3 B.J50
153.5	1340 1-25-95 404006	NA	6	SAA	SP	NA	P.D3 B.J50
154.0	1340 1-25-95 404006	NA	6	SAA	SP	NA	P.D3 B.J50
154.5	1340 1-25-95 404006	NA	6	SAA	SP	NA	P.D3 B.J50

INSTRUMENT	BACKGROUND	DATE	TIME
PID		Sept 14 34	
ALPHA	NA	NA	NA
BETA / GAMMA	000092	Sept 14 34	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-052

JC3-14-45 PAGE 44 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.(s): NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
154.5	1340 1-25-95			SAA			P.D 3
155.0	404006	NA	6		SP	NA	Bg 50
	1340 1-25-95			SAA			P.D 3
155.5	404006	NA	6		SP	NA	Bg 50
	1340 1-25-95			2.5Y 3/2 very Dark Grayish brown Poorly graded med. sand with a trace of fine gravel wet			P.D 3
156.0	404006	NA	6		SP	NA	Bg 50
	1340 1-25-95			SAA			P.D 3
156.5	404006	NA	6		SP	NA	Bg 50
	1340 1-25-95			SAA			P.D 3 Tot 200126
157.0	404006	NA	6		SP	NA	Bg 50 Size 200126 Total ~~200126~~
	1555 1-25-95			2.5Y 4/3 olive Brown Poorly graded fine sand with a trace of fine gravel wet			P.D 0
157.5	404007	NA	6		SP	N/A	Bg 50
	1555 1-25-95			SAA			P.D 0
158.0	404007	NA	6		SP	NA	Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 39		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 39		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-053

JC 3-14-95 46

PAGE 45 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50,03,32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
158.0 – 158.5	1555 1-25-95 404007	NA	6	SAA	SP	NA	PiDO Bγ50
158.5 – 159.0	1555 1-25-95 404007	NA	6	SAA	SP	NA	PiDO Bγ50
159.0 – 159.5	1555 1-25-95 404007	NA	6	SAA	SP	NA	PiDO Bγ50
159.5 – 160.0	1555 1-25-95 404007	NA	6	SAA	SP	NA	PiDO Bγ50
160.0 – 160.5	1555 1-25-95 404007	NA	6	SAA	SP	NA	PiDO Bγ50
160.5 – 161.0	1555 1-25-95 404007	NA	6	SAA	SP	NA	PiDO Bγ50
161.0 – 161.5	1555 1-25-95 404007	NA	6	SAA	SP	NA	PiDO Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 39		
ALPHA	NA	NA	NA
BETA / GAMMA	000094	See pg 39	

NOTES: None

47

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-054

PAGE 46 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50,03 3.2

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
161.5	1555 1-25-95			SAA	SP	NA	PID 0 Bγ 50
162.0	404007	NA	6				
	1600 1-25-95			SAA	SP	NA	PID 0 Bγ 50
162.5	404008	NA	6				
	1600 1-25-95			SAA	SP	NA	PID 0 Bγ 50
163.0	404008	NA	6				
	1600 1-25-95			SAA with some 10YR 3/1 very Dark Gray Sand	SP	NA	PID 0 Bγ 50 250mL Jar
163.5	404008	NA	6				
	1600 1-25-95			SAA	SP	NA	PID 0 Bγ 50
164.0	404008	NA	6				
	1600 1-25-95			SAA	SP	NA	PID 0 Bγ 50
164.5	404008	NA	6				
	1600 1-25-95			SAA	SP	NA	PID 0 Bγ 50
165.0	404008	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 34		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 34		

NOTES: None

000095

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-055

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
165.0	1600 1-25-95			SAA			P.D 0 Bg 50
166.5	404008	NA	6		SP	NA	
	1600 1-25-95			SAA			P.D 0 Bg 50
166.0	404008	NA	6		SP	NA	
	1600 1-25-95			SAA			P.D 0 Bg 50
166.5	404008	NA	6		SP	NA	
	1600 1-25-95			2.5Y 4/3 olive gray well graded sand some fine gravel wet			P.D 0 Bg 50 Sieve
167.0	404008	NA	6		SW	NA	
	0900 1-26-95			2.5Y 3/2 very dark grey ish brown poorly graded sand with a trace of fine gravel wet			P.D 0 Bg 50
167.5	404009	NA	6		SP	NA	
	0900 1-26-95			SAA			P.D 0 Bg 50
168.0	404009	NA	6		SP	NA	
	0900 1-26-95			SAA			P.D 0 Bg 50
168.5	404009	NA	6		SP	NA	

INSTRUMENT	BACKGROUND	DATE	TIME
PID	522 µg 39		
ALPHA	NA	NA	NA
BETA / GAMMA	000096 522 µg 39		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-056

PAGE 49 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 500332

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Foulkner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
168.5	0900 1-26-95			SAA	SP	FA	P.D 0 Bγ 50
169.0	404009	NA	6				
	0900 1-26-95			SAA	SP	NA	P.D 0 Bγ 50
169.5	404009	NA	6				
	1310 1-26-95			2.5 Y 3/2 very dark grayish Brown Poorly graded sand with a trace of fine gravel wet	SP	NA	P.D ~~+6~~ 0 Bγ 50
170.0	404010	NA	6				
	1310 1-26-95			SAA	SP	NA	P.D 0 Bγ 50
170.5	404010	NA	6				
	1310 1-26-95			SAA	SP	NA	P.D 0 Bγ 50
171.0	404010	NA	6				
	1310 1-26-95			SAA	SP	NA	P.D 0 Bγ 50
171.5	404010	NA	6				
	1310 1-26-95			SAA	SP	NA	P.D 0 Bγ 50
172.0	404010	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	1/26/95	0900
ALPHA	NA	NA	NA
BETA / GAMMA	50	1/26/95	0900

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-057

PAGE 50 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.:

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
172.0	1310 1-26-95			SAA	SP	NA	P.D 0 Bg 50
172.5	404010	NA	6				
	1310 1-26-95			SAA	SP	NA	P.D 0 Bg 50
173.0	404010	NA	6				
	1315 1-26-95			SAA	SP	NA	P.D 0 Bg 50
173.5	404011	NA	6				
	1315 1-26-95			SAA	SP	NA	P.D 0 Bg 50
174.0	404011	NA	6				
	1315 1-26-95			SAA	SP	NA	P.D 0 Bg 50
174.5	404011	NA	6				
	1315 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
175.0	404011	NA	6				
	1315 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
175.5	404011	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	Sep 1948		
ALPHA	NA	NA	NA
BETA / GAMMA	Sep 1948		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-058

PAGE 51 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brewer/Foultner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
175.5	1315 1-26-95			SAA with a trace of fine + coarse gravel wet	SP	NA	P.D 1.6 Bγ 50
176.0	404011	NA	6				
	1315 1-26-95			SAA	SP	NA	P.D 1.6 Bγ 50
176.5	404011	NA	6				
	~~1330~~ 1315 1-26-95			SAA	SP	NA	P.D 1.6 Bγ 50
177.0	404012	NA	6				
	1320 1-26-95			~~SAA~~ 2.5 Y 3/2 very Dark grayish brown poorly Graded Sand with a trace of fine gravel wet fine sand	SP	NA	P.D 1.6 Bγ 50
177.5	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bγ 50
178.0	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bγ 50
178.5	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bγ 50
179.0	404012	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 48		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 48		

NOTES: None

000093

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-059

JC 3-14-95 PAGE 52 OF 59

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
179.0	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
179.5	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
180.0	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
180.5	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
181.0	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
181.5	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
182.0	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
182.5	404012	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	Seepig 48		
ALPHA	NA	NA	NA
BETA / GAMMA	000100	19 48	

NOTES: NONE

*DATA CONVERTED PER ASTM STANDARD PENETRATION TEST

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-060

PAGE 53 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED:

WATER USED DURING DRILLING: 2065 gal | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
182.5							
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
183	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
183.5	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
184	404012	NA	6				
	1320 1-26-95			SAA	SP	NA	P.D 1.6 Bg 50
184.5	404012	NA	6				
	1320 1-26-95			2.5Y 3/2 very Dark Grayish brown Poorly graded fine sand with some fine gravel wet	SP	NA	P.D 1.6 Bg 50
185	404012	NA	6				
	1320 1-26-95			Shale 2.5Y 4/3 olive brown weathered Bedrock	NA	NA	P.D 1.6 Bg 50 Sieve
185.5	404012	NA	6				
	1320 1-26-95			2.5Y N5 Gray Shale	NA	NA	P.D 1.6 Bg 50
186	404012	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 48		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 48		

NOTES: None

VALUES COLLECTED PER ASTM STANDARD PENETRATION TEST

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31550-061

PAGE 53 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31550

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/19/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 1/27/95

WATER USED DURING DRILLING: 2065 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
186	1320 1-26-95			SAA	NA	NA	P.D 16. Bg 50
186.5	404012	NA	6				
	1320 1-26-95			2.54 N5 Gray weathered shale	NA	NA	P.D 16 Bg 50
187	404012	NA	6				
		NA		Bottom of Boring			P.D Bg
		NA					P.D Bg
		NA					P.D Bg
		NA					P.D Bg
		NA					P.D Bg

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See 1/19 48		
ALPHA	NA	NA	NA
BETA / GAMMA	See 1/19 48		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-004	PAGE 1 OF 22
PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31551	COORDINATES: NA
RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE STARTED: 2/6/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE COMPLETED: 2/8/95
WATER USED DURING DRILLING: 250 gallons	DRILLING CONTRACTOR: Alliance / DRILLING EQUIPMENT: Retasonic / DRILLER / HELPER: Brower/Foyatner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
0.0	1445 2-6-95 404056	NA	6	Stiff 10YR 4/3 DARK BROWN Silty CLAY w/ TRACE OF SAND Roots. MED PLASTICITY Slightly moist	CL	2	PID 0 βγ 50
0.5	1445 2-6-95 404056	NA	6	SAA w/ MN NODULES	CL	1.5	PID 0 βγ 50
1.0	1445 2-6-95 404056	NA	6	SAA	CL	1.5	PID 0 βγ 50
1.5	1445 2-6-95 404056	NA	6	SAA	CL	1.5	PID 0 βγ 50
2.0	1445 2-6-95 404056	NA	6	Stiff 10YR 4/2 DARK grayish Brown w/ some SAND & TRACE FINE gravel MED plasticity. Slightly moist	CL	1.5	PID 0 βγ 50
2.5	1445 2-6-95 404056	NA	6	SAA	CL	1.5	PID 0 βγ 50
3.0	1445 2-6-95 404056	NA	6	SAA	CL	1.5	PID 0 βγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	2/6/95	1440
ALPHA	NA	NA	NA
BETA / GAMMA	50	2/6/95	1440

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-005

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
3.5	1415 2-6-95 404056	NA	6	SAA	CL	1.5	PID 0 Bg 50
4.0	1450 2-6-95 404057	NA	6	very soft 10YR 5/4 Yellowish Brown Silty clay some sand + trace fine gravel trace of gray mottling + Fe stains. Med plasticity slightly moist	CL	3.5	PID 0 Bg 50
4.5	1450 2-6-95 404057	NA	6	SAA	CL	3.5	PID 0 Bg 50
5.0	1450 2-6-95 404057	NA	6	SAA	CL	3.5	PID 0 Bg 50
5.5	1450 2-6-95 404057	NA	6	SAA	CL	3.5	PID 0 Bg 50
6.0	1450 2-6-95 404057	NA	6	SAA	CL	3.5	PID 0 Bg 50
6.5	1450 2-6-95 404057	NA	6	SAA	CL	3.5	PID 0 Bg 50
7.0	1450 2-6-95 404057	NA	6	SAA	CL	3.5	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-006	PAGE 3 OF 28
PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31551	COORDINATES: NA
RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE STARTED: 2/6/95
GEOLOGIST: KEN GEIGER	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE COMPLETED: 2/8/95
WATER USED DURING DRILLING: 250 gallons	DRILLING CONTRACTOR: Alliance / DRILLING EQUIPMENT: RoTosonic / DRILLER / HELPER: Brown/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.0							
7.5	1510 2/6/95 404058	NA	6	very stiff 10YR 4/4 Dark Yellowish Brown silty clay with some sand and fine gravel med plasticity slightly moist	CI	3.5	PID 0. BT 50
8.0	1510 2/6/95 404058	NA	6	SAA with some coarse gravel	CI	3.0	PID 0 BT 50
8.5	1510 2/6/95 404058	NA	6	very stiff 10YR 5/2 Grayish Brown silty clay w/ some fine to coarse gravel med. plasticity slightly moist	CI	2.5	PID 0 BT 50
9.0	1510 2/6/95 404058	NA	6	med stiff 10YR 5/1 Gray with 10YR 5/3 Brown silty clay with some sand + fine gravel med. plasticity slightly moist	CI	.75	PID 0 BT 50
9.5	1510 2/6/95 404058	NA	6	very stiff 10YR 5/1 Gray w/ some brown mottling silty clay w/ some sand + fine gravel med plasticity slightly moist	CI	2.5	PID 0 BT 50
10.0	1510 2/6/95 404058	NA	6	SAA	CI	2.5	PID 0 BT 50
10.5	1510 2/6/95 404058	NA	6	SAA	CI	2.5	PID 0 BT 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

000105

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-007

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50,03 32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: RoTosonic

DRILLER / HELPER: Brown/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
10.5							
11.0	1510 2/6/95 404056	NA	6	SAA	CI	2.5	PID 0 BY 50
11.5	1510 2/6/95 404058	NA	2	med stiff 10YR 4/4 Dark Yellowish Brown silty sandy clay w/ pieces of fine Gravel low to med plasticity slightly moist	CI	.75	PID 0 BY 50
			4	very stiff 5Y 4/1 Dark Gray silty clay with some sand coarse Gravel, med plast. slightly moist	CI	3.75	
12.0	1510 2/6/95 404058	NA	6	very stiff 5Y 4/1 Dark Gray silty clay w/ some sand coarse Gravel med plast. slightly moist	CI	3.75	PID 0 BY 50
12.5	1530 2/6/95 404059	NA	6	stiff 5Y 4/1 Dark Gray w/ some Brown mottling silty clay w/ some sand + fine Gravel med plast. slightly moist	CI	1.5	PID 0 BY 50
13.0	1530 2/6/95 404059	NA	6	SAA	CI	1.5	PID 0 BY 50
13.5	1530 2/6/95 404059	NA	6	SAA w/ cobble 3"x2"x1"	CI	1.5	PID 0 BY 50
14.0	1530 2/6/95 404059	NA	6	very stiff 5Y 4/1 Dark Gray silty clay w/ some sand and fine to coarse Gravel med. plast. slightly moist	CI	3.0	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-008

PAGE 5 OF 22

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50,03 32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/6/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
14.0							
14.5	1530 2/6/95 404059	NA	6	SAA	Cl	3.0	PID 0 BY 50
15.0	1530 2/6/95 404059	NA	6	SAA	Cl	3.0	PID 0 BY 50
15.5	1530 2/6/95 404059	NA	6	SAA	Cl	3.0	PID 0 BY 50 Film Roll 9
16.0	1530 2/6/95 404059	NA	6	SAA with some wood fragments	Cl	3.0	PID 0 BY 50
16.5	1530 2/6/95 404059	NA	4	very stiff 10YR 5/4 Yellowish Brown very sandy silty Clay w/ some Fine Gravel Low plast. slightly moist.	Cl	3.0	PID 0 BY 50
			2	10YR 5/4 Yellowish Brown very silty poorly Graded Fine sand w/ some Clay + Fine Gravel Dry	SP	NA	
17.0	1530 2/6/95 404059	NA	6	10YR 5/4 Yellowish Brown very silty poorly Graded Fine Sand w/ some Clay + Fine Gravel, Dry	SP	NA	PID 0 BY 50 Sieve 200126511
17.5	1600 2/6/95 404060	NA	6	10YR ~~5/4~~ 4/4 Dark yellowish Brown poorly Graded Fine sand w/ some Fine Gravel Dry	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

000107

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-009

PAGE 6 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
17.5							
18.0	1600 2-6-95 404060	NA	6	SAA	SP	NA	PID 0 Bγ 50
18.5	1600 2-6-95 404060	NA	6	SAA	SP	NA	PID 0 Bγ 50
19.0	1600 2-6-95 404060	NA	6	SAA	SP	NA	PID 0 Bγ 50
19.5	1600 2-6-95 404060	NA	6	SAA	SP	NA	PID 0 Bγ 50
20.0	1600 2-6-95 404060	NA	6	SAA	SP	NA	PID 0 Bγ 50
20.5	1600 2-6-95 404060	NA	6	SAA	SP	NA	PID 0 Bγ 50
21.0	1600 2-6-95 404060	NA	6	SAA	SP	NA	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881 000108

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:	500332-31551-010
PAGE	7 OF 22
PROJECT NAME:	South Field Pump Test
PROJECT NO.:	50.03.32
BORING NUMBER:	31551
COORDINATES:	NA
RELATED FAL NO.s:	NA
SURFACE ELEVATION:	NA
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE STARTED:	2/6/95
GEOLOGIST:	Ken Geiger
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE COMPLETED:	2/8/95
WATER USED DURING DRILLING:	250 gallons
DRILLING CONTRACTOR:	Alliance
DRILLING EQUIPMENT:	Rotosonic
DRILLER / HELPER:	Brower/Fortner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
21.0							
21.5	1600 2-6-95 404060	NA	6	SAA	SP	NA	PID 0. Bg 50
22.0	1600 2-6-95 404060	NA	6	SAA	SP	NA	PID 0 Bg 50
22.5	1605 2-6-95 404061	NA	6	SAA	SP	NA	PID 0 Bg 50
23.0	1605 2-6-95 404061	NA	6	SAA	SP	NA	PID 0 Bg 50
23.5	1605 2-6-95 404061	NA	6	SAA	SP	NA	PID 0 Bg 50
24.0	1605 2-6-95 404061	NA	6	SAA	SP	NA	PID 0 Bg 50
24.5	1605 2-6-95 404061	NA	6	SAA	SP	NA	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See log		
ALPHA	NA	NA	NA
BETA / GAMMA	See log		

NOTES: None

000103

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-011

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.5							
25.0	1605 2-6-95 404061	NA	6	SAA	SP	N/A	PID 0 Bγ 50
25.5	1605 2-6-95 404061	NA	6	SAA	SP	N/A	PID 0 Bγ 50
26.0	1605 2-6-95 404061	NA	6	SAA	SP	N/A	PID 0 Bγ 50
26.5	1605 2-6-95 404061	NA	6	SAA	SP	N/A	PID 0 Bγ 50
27.0	1605 2-6-95 404061	NA	6	SAA	SP	N/A	PID 0 Bγ 50 SIEVE 2cc126513
27.5	1330 2-7-95 404062	NA	6	10YR 4/3 BROWN Poorly graded fine sand w/ some fine gravel. DRY	SP	NA	PID 0 Bγ 50
28.0	1330 2-7-95 404062	NA	6	SAA	SP	NA	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

000110

G:/WPSC/94-778.DRW (11-23-94)

FEMP
LITHOLOGIC LOG

CONTROL NO.: 500332-31551-012

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
28.0							
28.5	1330 2-7-95 404062	NA	6	SAA	SP	NA	PID 0 Bg 50
29.0	1330 2-7-95 404062	NA	6	SAA	SP	NA	PID 0 Bg 50
29.5	1330 2-7-95 404062	NA	6	SAA	SP	NA	PID 0 Bg 50
30.0	1330 2-7-95 404062	NA	6	SAA	SP	NA	PID 0 Bg 50
30.5	1330 2-7-95 404062	NA	6	SAA	SP	NA	PID 0 Bg 50
31.0	1330 2-7-95 404062	NA	6	SAA	SP	NA	PID 0 Bg 50
31.5	1330 2-7-95 404063	NA	6	10 YR 4/3 BROWN ~~SANDY CLAY~~ CLAYEY SAND w/ SOME FINE GRAVEL, DRY	SP	NA	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2/7/95	1315
ALPHA	NA	NA	NA
BETA / GAMMA	50	2/7/95	1315

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-013

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.5							
32.0	1330 2-7-95 404062	NA	6	SAA	SP	NA	P.D 0 Bg 50
32.5	1335 2-7-95 404063	NA	6	SAA	SP	NA	P.D 0 Bg 50
33.0	1335 2-7-95 404063	NA	6	SAA	SP	NA	P.D 0 Bg 50
33.5	1335 2-7-95 404063	NA	6	very soft 10YR 3/2 very dark grayish brown sandy silty clay, dry to slightly moist, med plasticity	CL	<.25 NA	P.D 0 Bg 50
34.0	1335 2-7-95 404063	NA	6	SAA 32.5-33.0	SP	NA	P.D 0 Bg 50
34.5	1335 2-7-95 404063	NA	6	SAA	SP	NA	P.D 0 Bg 50
35.0	1335 2-7-95 404063	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	Sa	pg 9	
ALPHA	NA	NA	NA
BETA / GAMMA	Sa	pg 9	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-014	PAGE 11 OF 28
PROJECT NAME: South Field Pump Test	PROJECT NO.: 30.03.32
BORING NUMBER: 31551	COORDINATES: NA
RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE STARTED: 2/6/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE COMPLETED: 2/8/95
WATER USED DURING DRILLING: 250 gallons	DRILLING CONTRACTOR: Alliance / DRILLING EQUIPMENT: Rotosonic / DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
35.0							
35.5	1335 2-7-95 404063	NA	6	SAA	SP	NA	P.D 0 Bg 50
36.0	1335 2-7-95 404063	NA	6	SAA	SP	NA	P.D 0 Bg 50
36.5	1335 2-7-95 404063	NA	6	SAA	SP	NA	P.D 0 Bg 50
37.0	1335 2-7-95 404063	NA	6	SAA	SP	NA	P.D 0 Bg 50 SIEVE 200126518
37.5	1400 2-7-95 404064	NA	6	10YR 4/2 DARK GRAYISH BROWN Poorly GRADED FINE SAND w/ some FINE GRAVEL DRY	SP	NA	P.D 0 Bg 50
38.0	1400 2-7-95 404064	NA	6	SAA	SP	NA	P.D 0 Bg 50
38.5	1400 2-7-95 404064	NA	6	SAA w/ COBBLE 4"x1"x1"	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 9		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 9		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-015

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
38.5							
	1400 2-7-95 404064	NA	6	SAA	SP	NA	P.D 0 Bg 50
39.0							
	1400 2-7-95 404064	NA	6	SAA	SP	NA	P.D 0 Bg 50
39.5							
	1400 2-7-95 404064	NA	6	SAA	SP	NA	P.D 0 Bg 50
40.0							
	1400 2-7-95 404064	NA	6	10YR 4/2 DARK grayish Brown well graded SAND w/ some fine gravel Dry	SW	NA	P.D 0 Bg 50
40.5							
	1400 2-7-95 404064	NA	6	SAA	SW	NA	P.D 0 Bg 50
41.0							
	1400 2-7-95 404064	NA	6	SAA	SW	NA	P.D 0 Bg 50
41.5							
	1400 2-7-95 404064	NA	6	SAA	SW	NA	P.D 0 Bg 50
42.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 9		
ALPHA	NA	NA	NA
BETA / GAMMA	000114	See pg 9	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-016

PAGE 13 OF 18

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
42.0	1405 2/7/95 404065	NA	6	10YR 4/4 DARK yellowish Brown well graded clayey silty sand w/ some fine gravel, dry	SW	N/A	P.D 0 Bg 50
42.5	1405 2/7/95 404065	NA	6	SAA	SW	NA	P.D 0 Bg 50
43.0	1405 2/7/95 404065	NA	6	SAA	SW	NA	P.D 0 Bg 50
43.5	1405 2/7/95 404065	NA	6	SAA	SW	NA	P.D 0 Bg 50
44.0	1405 2/7/95 404065	NA	6	10YR 5/4 yellowish Brown Poorly graded clayey silty fine sand w/ some fine to coarse gravel. dry	SP	NA	P.D 0 Bg 50
44.5	1405 2/7/95 404065	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.0	1405 2/7/95 404065	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID		See pg 9	
ALPHA	NA	NA	NA
BETA / GAMMA		See pg 9	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-017

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
45.5							
46.0	1405 2-7-95 404065	NA	6	SAA	SP	NA	P.D 0 Bg 50
46.5	1405 2-7-95 404065	NA	6	SAA	SP	NA	P.D 0 Bg 50
47.0	1405 2-7-95 404065	NA	6	SAA	SP	NA	P.D 0 Bg 50 Sieve 20012651 9
47.5	1425 2-7-95 404066	NA	6	10YR 4/5 DARK yellowish BROWN WELL GRADED FINE GRAVEL w/ SOME COARSE SAND TRACE OF COARSE GRAVEL. DRY	GW	NA	P.D 0 Bg 50
48.0	1425 2-7-95 404066	NA	6	SAA	GW	NA	P.D 0 Bg 50
48.5	1425 2-7-95 404066	NA	6	10YR 4/5 DARK yellowish BROWN POORLY GRADED FINE SAND w/ SOME FINE GRAVEL DRY	SP	NA	P.D 0 Bg 50
49.0	1425 2-7-95 404066	NA	6	10YR 4/2 DARK grayish BROWN POORLY GRADED MED SAND w/ SOME FINE GRAVEL DRY	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See 1199		
ALPHA	NA	NA	NA
BETA / GAMMA	000116 See 1199		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-018

PAGE 15 OF 28

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES:

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
49.0	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
49.5	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
50.0	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
50.5	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
51.0	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
51.5	1425 2-7-95 404066	NA	6	SAA w/ MORE GRAVEL	SP	NA	P.D 0 Bg 50
52.0	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
52.5	1425 2-7-95 404066	NA	6	10YR 4/2 DARK GRAYISH BROWN Poorly graded coarse sand w/ some fine to coarse gravel	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 9		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 9		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-019

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Kotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
52.5							
53.0	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
53.5	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
54.0	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
54.5	1425 2-7-95 404066	NA	1" 5"	10YR5/4 Yellowish Brown fine sandy silt 10 YR 4/3 DARK BROWN poorly graded med sand w/ trace fine gravel	SM SP	NA NA	P.D 0 Bg 50
55.0	1425 2-7-95 404066	NA	6	SAA	SP	NA	P.D 0 Bg 50
55.5	1430 2-7-95 404067	NA	6	SAA	SP	NA	P.D 0 Bg 50
56.0	1430 2-7-95 404067	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 9		
ALPHA	NA	NA	NA
BETA / GAMMA	000118 See 199		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-020

PAGE 17 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.0332

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
56.0							
56.5	1430 2-7-95 404067	NA	6	SAA	SP	NA	PID 0 Bγ 50
57.0	1430 2-7-95 404067	NA	6	SAA	SP	NA	PID 0 Bγ 50 SIEVE 200126520
57.5	1430 2-7-95 404067	NA	6	SAA	SP	NA	PID 0 Bγ 50
58.0	1430 2-7-95 404067	NA	6	SAA	SP	NA	PID 0 Bγ 50
58.5	1430 2-7-95 404067	NA	6	SAA	SP	NA	PID 0 Bγ 50
59.0	1430 2-7-95 404067	NA	6	SAA	SP	NA	PID 0 Bγ 50
59.5	1430 2-7-95 404067	NA	6	SAA	SP	NA	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID		See pg 9	
ALPHA	NA	NA	NA
BETA / GAMMA		See pg 9	

NOTES: KC 2/9/95
~~NONE~~
59.5' - 60.0' Same as
59.0 - 59.5'

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-021

PROJECT NAME: South Field Pump Test

PROJECT NO.: 500332

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Blower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
60.0							
	1430 2-7-95 404067	NA	6	SAA	SP	NA	P.D 0 Bg 50
60.5							
	1430 2-7-95 404067	NA	6	SAA	SP	NA	P.D 0 Bg 50
61.0							
	1430 2-7-95 404067	NA	6	SAA	SP	NA	P.D 0 Bg 50
61.5							
	1430 2-7-95 404067	NA	6	SAA	SP	NA	P.D 0 Bg 50
62.0							
	1435 2-7-95 404068	NA	6	SAA	SP	NA	P.D 0 Bg 50
62.5							
	1435 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bg 50
63.0							
	1435 2-7-95 404068	NA	6	SAA	SP	NA	P.D 0 Bg 50
63.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 9	
ALPHA	NA	NA	NA
BETA / GAMMA	000120 See	pg 9	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-022

PAGE 19 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES:

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
63.5							
64.0	1435 2-7-95 404068	NA	6	SAA	SP	NA	PiD 0 Bγ 50
64.5	1435 2-7-95 404068	NA	6	10YR 4/4 DARK yellowish Brown poorly graded fine sand w/ trace of fine gravel. WET	SP	NA	PiD 0 Bγ 50
65.0	1435 2-7-95 404068	NA	6	SAA	SP	NA	PiD 0 Bγ 50
65.5	1435 2-7-95 404068	NA	6	SAA	SP	NA	PiD 0 Bγ 50
66.0	1435 2-7-95 404068	NA	6	SAA	SP	NA	PiD 0 Bγ 50
66.5	1435 2-7-95 404068	NA	6	SAA	SP	NA	PiD 0 Bγ 50
67.0	1435 2-7-95 404068	NA	6	SAA	SP	NA	PiD 0 Bγ 50 Sieve 2001265 21

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 9	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 9	

NOTES: None

CONTROL NO.: 500332-31551-023

FEMP

LITHOLOGIC LOG

PAGE 20 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
67.0	1445 2-7-95 404069	NA	6	10YR 4/3 DARK BROWN Poorly graded fine sand w/ fine to coarse gravel, WET	SP	NA	P.D 0 Bg 50
67.5	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bg 50
68.0	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bg 50
68.5	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bg 50
69.0	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bg 50
69.5	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bg 50
70.0	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Tot U 20012653 Bg 50 Sieve 20012652
70.5	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 9		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 9		

NOTES: None

000122

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-024

PAGE 21 OF 28

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
70.5							
	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bγ50
71.0							
	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bγ50
71.5							
	1445 2-7-95 404069	NA	6	SAA	SP	NA	P.D 0 Bγ50
72.0							
	1500 2-7-95 404070	NA	6	SAA	SP	NA	P.D 0 Bγ50
72.5							
	1500 2-7-95 404070	NA	6	SAA	SP	NA	P.D 0 Bγ50
73.0							
	1500 2-7-95 404070	NA	6	10YR 4/3 DARK BROWN Poorly graded course sand w/ some fine gravel wet.	SP	NA	P.D 0 Bγ50
73.5							
	1500 2-7-95 404070	NA	6	SAA	SP	NA	P.D 0 Bγ50
74.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 9		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 9		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31551-025

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31551

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/8/95

WATER USED DURING DRILLING: 250 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
74.0	1500 2-7-95 404070	NA	6	SAA	sl	NA	P.D 0 Bg 50
74.5	1500 2-7-95 404070	NA	6	SAA	sl	NA	P.D 0 Bg 50
75.0	1500 2-7-95 404070	NA	6	SAA	sl	NA	P.D 0 Bg 50
75.5	1500 2-7-95 404070	NA	6	SAA	sl	NA	P.D 0 Bg 50
76.0	1500 2-7-95 404070	NA	6	SAA	sl	NA	P.D 0 Bg 50
76.5	1500 2-7-95 404070	NA	6	SAA	sl	NA	P.D 0 Bg 50
77.0	1500 2-7-95 404070	NA	6	SAA	sl	NA	P.D 0 Bg 50 SIEVE 200 12
77.5		NA		Bottom of Boring 77.0 feet			P.D Bg

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 9		
ALPHA	NA	NA	NA
BETA / GAMMA	000124 See pg 9		

NOTES: None

CONTROL NO.: 500332-31552-004	FEMP LITHOLOGIC LOG	PAGE 1 OF 22

PROJECT NAME: South Field Pumping Test			PROJECT NO.: 50.03.32
BORING NUMBER: 31552	COORDINATES: N/A	RELATED FAL NO.s: N/A	
SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 2/27/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 3/1/95
WATER USED DURING DRILLING: 300 gallons	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Foyertner	

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
0.0 – 0.5	1015 2-27-95 404166	NA	6	10YR 4/4 DARK Yellowish Brown Silty Clay, Roots Med plast. Slightly Moist	CL	1.0	PID 0 β γ 50
0.5 – 1.0	1015 2-27-95 404166	NA	6	SAA.	CL	1.5	PID 0 β γ 50
1.0 – 1.5	1015 2-27-95 404166	NA	6	SAA w/ MN. CONC.	CL	1.5	PID 0 β γ 50
1.5 – 2.0	1015 2-27-95 404166	NA	6	SAA	CL	1.5	PID 0 β γ 50
2.0 – 2.5	1015 2-27-95 404166	NA	6	SAA	CL	1.5	PID 0 β γ 50
2.5 – 3.0	1015 2-27-95 404166	NA	6	SAA	CL	1.5	PID 0 β γ 50
3.0 – 3.5	1015 2-27-95 404166	NA	6	10YR 5/6 Yellowish Brown. Very w/ grey mottling. Silty Clay. Low plast. Slightly moist.	CL	.75	PID 0 β γ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2-27-95	1000
ALPHA	NA	NA	NA
BETA / GAMMA	50	2-27-95	1000

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-005

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
3.5							
4.0	1015 2-27-95 404166	NA	6	SAA	CL	.75	PID 0 BGSD
4.5	1015 2-27-95 404166	NA	6	SAA	CL	.75	PID 0 BGSD
5.0	1015 2-27-95 404166	NA	6	SAA	CL	.75	PID 0 BGSD
5.5	1015 2-27-95 404166	NA	6	10 YR 4/6 DARK yellowish Brown. VERY SILTY CLAY w/ SOME SAND. LOW PLAST. SLIGHTLY MOIST	CL	.75	PID 0 BGSD
6.0	1015 2-27-95 404166	NA	6	SAA	CL	.75	PID 0 BGSD
6.5	1015 2-27-95 404166	NA	6	10 YR 4/4 DARK yellowish BROWN. SILTY CLAY w/ SAND + GRAVEL. MED PLAST. SLIGHTLY MOIST	CL	2.0	PID 0 BGSD
7.0	1015 2-27-95 404166	NA	6	SAA	CL	2.0	PID 0 BGSD

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See Pg. 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See Pg. 1		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-006

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552.

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.0	1045 2-27-95 404167	NA	6	10YR 4/2 DARK GRAYISH BROWN Silty clay w/ SAND + GRAVEL. MED. PLAST. Slightly Moist.	CL	.75	PiD 0 Bγ 50 Roll 16
7.5	1045 2-27-95 404167	NA	6	SAA	CL	.75	PiD 0 Bγ 50
8.0	1045 2-27-95 404167	NA	6	SAA	CL	.75	PiD 0 Bγ 50
8.5	1045 2-27-95 404167	NA	6	SAA	CL	.75	PiD 0 Bγ 50
9.0	1045 2-27-95 404167	NA	6	SAA	CL	.75	PiD 0 Bγ 50
9.5	1045 2-27-95 404167	NA	6*	SAA	CL	.75	PiD 0 Bγ 50
10.0	1045 2-27-95 404167	NA	6	SAA	CL	.75	PiD 0 Bγ 50
10.5	1045 2-27-95 404167	NA	6	2.5Y 4/1 DARK GRAY w/ some BROWN Mottling. Silty clay w/ SAND + GRAVEL MED PLAST. Slightly Moist	CL	4.75	PiD 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: NONE

000127

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-007

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
10.5							
11.0	1045 2-27-95 404167	NA	6	SAA	CL	4.75	PID 0 Bγ 50
11.5	1045 2-27-95 404167	NA	6	2.5Y 4/1 DARK GRAY. SILTY CLAY W/ SAND+GRAVEL. MED PLAST. SLIGHTLY MOIST	CL	2.75	PID 0 Bγ 50
12.0	1045 2-27-95 404167	NA	6	SAA	CL	2.75	PID 0 Bγ 50
12.5	1050 2-27-95 404168	NA	6	SAA W/ COBBLE 4"x3"x2"	CL	2.5	PID 0 Bγ 50
13.0	1050 2-27-95 404168	NA	6	SAA 11.5-12.0 W/MORE GRAVEL.	CL	2.5	PID 0 Bγ 50
13.5	1050 2-27-95 404168	NA	6	SAA	CL	2.5	PID 0 Bγ 50
14.0	1050 2-27-95 404168	NA	6	SAA	CL	2.5	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-008

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brower/Fouztner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
14.0							
14.5	1050 2-27-95 404168	NA	6	SAA	CL	2.5	PID 0 Bg 10
15.0	1050 2-27-95 404168	NA	6	SAA	CL	2.5	PID 0 Bg 10
15.5	1050 2-27-95 404168	NA	6	SAA	CL	2.5	PID 0 Bg 50
16.0	1050 2-27-95 404168	NA	6	SAA	CL	2.5	PID 0 Bg 50
16.5	1050 2-27-95 404168	NA	6	SAA	CL	2.5	PID 0 Bg 50
17.0	1050 2-27-95 404168	NA	6	2.5 Y 4/3 olive brown. Silty clay w/ sand + fine gravel. Med plast. Slightly moist	CL	4.5	PID 0 Bg 50 Sieve-20012661 7
17.5	1100 2-27-95 404169	NA	6	10 YR 4/4 dark yellowish brown. Poorly graded fine sand w/ coarse sand + fine gravel. Dry.	SP	NA	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: NONE

000129

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

CONTROL NO.: 500332-31552-009

FEMP

LITHOLOGIC LOG

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
17.5							
18.0	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0. Bγ 50
18.5	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
19.0	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
19.5	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
20.0	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
20.5	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
21.0	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

000130

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-010

PAGE 7 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fortner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
21.0							
21.5	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
22.0	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
22.5	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
23.0	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
23.5	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
24.0	1100 2-27-95 404169	NA	6	SAA	SP	NA	PID 0 Bγ 50
24.5	2-27-95 NA	NA	0	NR	NA	NA	PID — Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE Pg. 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See Pg 1		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-011

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.5							
25.0	NA	NA	0	NR	NA	NA	PiDNA BgNA
25.5	NA	NA	0	NR	NA	NA	PiDNA BgNA
26.0	NA	NA	0	NR	NA	NA	PiDNA BgNA
26.5	NA	NA	0	NR	NA	NA	PiDNA BgNA
27.0	NA	NA	0	NR	NA	NA	PiDNA BgNA
27.5	1120 2-27-95 404170	NA	6	10 YR 4/4 DARK yellowish Brown poorly graded fine sand w/fine gravel. DRY	SP	NA	PiD0 Bg50 27.0 ft SIEVE 200126L.G
28.0	1120 2-27-95 404170	NA	6	SAME	SP	NA	PiD0 Bg50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE Pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See Pg 1		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881 000132

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-012

PAGE 9 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
28.0							
28.5	1120 2-27-95 404170	NA	6	SAA	SP	NA	PiDO Bγ50
29.0	1120 2-27-95 404170	NA	6	SAA	SP	NA	PiDO Bγ50
29.5	1120 2-27-95 404170	NA	6	SAA	SP	NA	PiDO Bγ50
30.0	1120 2-27-95 404170	NA	6	SAA	SP	NA	PiDO Bγ50
30.5	1120 2-27-95 404170	NA	6	SAA	SP	NA	PiDO Bγ50
31.0	1120 2-27-95 404170	NA	6	SAA	SP	NA	PiDO Bγ50
31.5	1120 2-27-95 404170	NA	6	SAA	SP	NA	PiDO Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: D.S 3/4/95 ~~NeA~~ NONE

000133

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-013

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.5							
32.0	1120 2-27-95 404170	NA	6	SAA	SP	NA	P.D 0 B γ 50
32.5	1125 2-27-95 404171	NA	6	SAA w/No gravel.	SP	NA	P.D 0 B γ 50
33.0	1125 2-27-95 404171	NA	6	SAA	SP	NA	P.D 0 B γ 50
33.5	1125 2-27-95 404171	NA	6	SAA	SP	NA	P.D 0 B γ 50
34.0	1125 2-27-95 404171	NA	6	SAA	SP	NA	P.D 0 B γ 50
34.5	1125 2-27-95 404171	NA	6	SAA	SP	NA	P.D 0 B γ 50
35.0	1125 2-27-95 404171	NA	6	SAA	SP	NA	P.D 0 B γ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-014

PAGE 11 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
35.0							
35.5	1125 2-27-95 404171	NA	6	SAA	SP	NA	PiDo Bγ50
36.0	1125 2-27-95 404171	NA	6	SAA	SP	NA	PiDo Bγ50
36.5	1125 2-27-95 404171	NA	6	SAA	SP	NA	PiDo Bγ50
37.0	1125 2-27-95 404171	NA	6	SAA	SP	NA	PiDo Bγ50 SiEve-200126621
37.5	1230 2-27-95 404172	NA	6	10YR 4/4 DARK yellowish BROWN. POORLY GRADED FINE SAND w/FINE GRAVEL. DRY.	SP	NA	PiDo Bγ50
38.0	1230 2-27-95 404172	NA	6	SAA	SP	NA	PiDo Bγ50
38.5	1230 2-27-95 404172	NA	6	SAA	SP	NA	PiDo Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: NONE

000135

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-015

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A

DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A

DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Lotosonic

DRILLER / HELPER: Blower/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
38.5							
39.0	1230 2-27-95 404172	NA	6	SAA	SP	NA	P.D0 Bg50
39.5	1230 2-27-95 404172	NA	6	SAA	SP	NA	P.D0 Bg50
40.0	1230 2-27-95 404172	NA	6	SAA	SP	NA	P.D0 Bg50
40.5	1230 2-27-95 404172	NA	6	SAA	SP	NA	P.D0 Bg50
41.0	1230 2-27-95 404172	NA	6	SAA	SP	NA	P.D0 Bg50
41.5	1230 2-27-95 404172	NA	6	SAA w/ No gravel	SP	NA	P.D0 Bg50
42.0	1230 2-27-95 404172	NA	6	SAA	SP	NA	P.D0 Bg50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-016

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A

DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A

DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
42.0							
42.5	1230 2-27-95 404173	NA	6	10 YR 4/4 DARK yellowish Brown. poorly graded fine sand w/ fine gravel. Dry.	SP	NA	P.D 0 Bg 50
43.0	1230 2-27-95 404173	NA	6	SAA	SP	NA	P.D 0 Bg 50
43.5	1230 2-27-95 404173	NA	6	SAA	SP	NA	P.D 0 Bg 50
44.0	1230 2-27-95 404173	NA	6	SAA	SP	NA	P.D 0 Bg 50
44.5	1230 2-27-95 404173	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.0	1230 2-27-95 404173	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.5	1230 2-27-95 404173	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 1	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-017

PAGE 14 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
45.5	1230 2-27-95 404173	NA	6	SAA	SP	NA	PiDO Bg 50
46.0	1230 2-27-95 404173	NA	6	SAA	SP	NA	PiDO Bg 50
46.5	1230 2-27-95 404173	NA	6	SAA	SP	NA	PiDO Bg 50
47.0	1240 2-27-95 404174	NA	6	10 Y 4/4 DARK yellowish BROWN. Poorly graded Fine sand w/ coarse sand & Fine gravel. DRY	SP	NA	PiDO Bg 50
47.5	1240 2-27-95 404174	NA	6	SAA	SP	NA	PiDO Bg 50
48.0	1240 2-27-95 404174	NA	6	SAA	SP	NA	PiDO Bg 50
48.5	1240 2-27-95 404174	NA	6	SAA	SP	NA	PiDO Bg 50
49.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: NONE

000138

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-018

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
49.0							
49.5	1240 2-27-95 404174	NA	6	SAA	SP	NA	P.D 0 Bg 50
50.0	1240 2-27-95 404174	NA	6	SAA	SP	NA	P.D 0 Bg 50
50.5	1240 2-27-95 404174	NA	6	SAA	SP	NA	P.D 0 Bg 50
51.0	1240 2-27-95 404174	NA	6	SAA	SP	NA	P.D 0 Bg 50
51.5	1240 2-27-95 404174	NA	6	SAA	SP	NA	P.D 0 Bg 50
52.0	1240 2-27-95 404174	NA	6	SAA	SP	NA	P.D 0 Bg 50
52.5	1245 2-27-95 404175	NA	6	10YR 4/4 DARK YELLOWISH BROWN POORLY GRADED FINE SAND w/ COARSE SAND FINE TO COARSE GRAVEL. DRY	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	SEE	Pg 1	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-019

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
52.5							
53.0	1245 2-27-95 404175	NA	6	SAA	SP	NA	PiDO Bg50
53.5	1245 2-27-95 404175	NA	6	SAA w/COBBLE 4"x3"x2"	SP	NA	PiDO Bg50
54.0	1245 2-27-95 404175	NA	6	SAA 52.5-53.0	SP	NA	PiDO Bg50
54.5	1245 2-27-95 404175	NA	6	SAA	SP	NA	PiDO Bg50
55.0	1245 2-27-95 404175	NA	6	SAA	SP	NA	PiDO Bg50
55.5	1245 2-27-95 404175	NA	6	SAA	SP	NA	PiDO Bg50
56.0	1245 2-27-95 404175	NA	6	SAA	SP	NA	PiDO Bg50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	SEE	Pg 1	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-020

PAGE 17 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
56.0	1245 2-27-95 404175	NA	6	SAA	SP	NA	PiDO Bγ50
56.5	1245 2-27-95 404175	NA	6	SAA	SP	NA	PiDO Bγ50 SIEVE-20026625
57.0	1255 2-27-95 404176	NA	6	1.5 YR 4/4 DARK yellowish BROWN. POORLY GRADED MED SAND. FINE GRAVEL TRACE OF COARSE GRAVEL. ~~DRY~~ 2-27-95 WET	SP	NA	PiDO Bγ50
57.5	1255 2-27-95 404176	NA	6	SAA	SP	NA	PiDO Bγ50
58.0	1255 2-27-95 404176	NA	6	SAA	SP	NA	PiDO Bγ50
58.5	1255 2-27-95 404176	NA	6	SAA	SP	NA	PiDO Bγ50
59.0	1255 2-27-95 404176	NA	6	SAA	SP	NA	PiDO Bγ50
59.5	1255 2-27-95 404176	NA	6	SAA	SP	NA	PiDO Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	SEE	Pg 1	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-021

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: NA | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Lotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
60.0	1255 2-27-95 404176	NA	6	SAA	SP	NA	P.D 0 Bg 50
60.5	1255 2-27-95 404176	NA	6	SAA	SP	NA	P.D 0 Bg 50
61.0	1255 2-27-95 404176	NA	6	SAA	SP	NA	P.D 0 Bg 50
61.5	1255 2-27-95 404176	NA	6	SAA	SP	NA	P.D 0 Bg 50
62.0	1300 2-27-95 404177	NA	6	10YR 4/4 DARK Yellowish Brown Poorly graded med sand w/ coarse sand with fine gravel. wet	SP	NA	P.D 0 Bg 50
62.5	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50
63.0	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50
63.5	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-022	PAGE 19 OF 22
PROJECT NAME: South Field Pump Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31552	COORDINATES: N/A
RELATED FAL NO.: N/A	
SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 2/27/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 3/1/95
WATER USED DURING DRILLING: 300 gal.	DRILLING CONTRACTOR: Alliance; DRILLING EQUIPMENT: Rotosonic; DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
63.5	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50
64.0	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50
64.5	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50
65.0	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50
65.5	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50
66.0	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 52
66.5	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50
67.0	1300 2-27-95 404177	NA	6	SAA	SP	NA	P.D 0 Bg 50 SiCR-20012662

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	Pg 1	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-023

PAGE 20 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
67.0							
67.5	1315 2-27-95 404178	NA	6	10YR 4/4 DARK yellowish Brown poorly graded med sand w/ coarse sand + fine gravel. wet	SP	NA	P.D.O Bg 50
68.0	1315 2-27-95 404178	NA	6	SAA	SP	NA	P.D.C Bg 50
68.5	1315 2-27-95 404178	NA	6	SAA	SP	NA	P.D.O Bg 50
69.0	1315 2-27-95 404178	NA	6	SAA	SP	NA	P.D.C. Bg 50
69.5	1315 2-27-95 404178	NA	6	SAA	SP	NA	P.D.C Bg 50
70.0	1315 2-27-95 404178	NA	6	SAA	SP	NA	P.D.C Bg 50 Sieve-200135-991
70.5	1315 2-27-95 404178	NA	6	SAA	SP	NA	P.D.O Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE Pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	SEE Pg 1		

NOTES: NONE

000144

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-024

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
70.5	1315 2.27.95 404178	NA	6	SAA	SP	NA	P.D 0 Bg 50
71.0	1315 2.27.95 404178	NA	6	SAA	SP	NA	P.D 0 Bg 50
71.5	1315 2.27.95 404178	NA	6	SAA	SP	NA	P.D 0 Bg 50
72.0	1330 2.27.95 404179	NA	6	10 YR 4/4 DARK Yellowish Brown. Poorly graded coarse sand w/fine to coarse gravel. wet	SP	NA	P.D 0 Bg 50
72.5	1330 2.27.95 404179	NA	6	SAA w/ COBBLE 3"x2"x1"	SP	NA	P.D 0 Bg 50
73.0	1330 2.27.95 404179	NA	6	SAA 72.0-72.5	SP	NA	P.D 0 Bg 50
73.5	1330 2.27.95 404179	NA	6	10 YR 4/4 DARK Yellowish Brown. Poorly graded fine sand. wet. w/trace of fine gravel	SP	NA	P.D 0 Bg 50
74.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.3 31245 SS	SEE Pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	SEE	Pg 1	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31552-025

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31552

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 3/1/95

WATER USED DURING DRILLING: 300gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Blower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
74.0							
74.5	1330 2-27-95 404179	NA	6	SAA 72.0-72.5	SP	NA	P.D0 Bg50
75.0	1330 2-27-95 404179	NA	6	SAA	SP	NA	P.D0 Bg50 SIEVE-200135996
75.5	1330 2-27-95 404179	NA	6	SAA	SP	NA	P.D0 Bg50
76.0	1330 2-27-95 404179	NA	6	SAA	SP	NA	P.D0 Bg50
76.5	1330 2-27-95 404179	NA	6	SAA	SP	NA	P.D0 Bg50
77.0	1330 2-27-95 404179	NA	6	SAA	SP	NA	P.D0 Bg50
77.5		NA		Bottom of Boring 77'			P.D Bg

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE	Pg 1	
ALPHA	NA	NA	NA
BETA/GAMMA	SEE	Pg 1	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-008

PAGE 1 OF 54

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.(s): NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 Gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Retasonic

DRILLER / HELPER: Brower/Fayetner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
0.0	1310 2-16-95			Soft 10 YR 5/6 yellowish brown silty clay w/ trace of sand + roots med plast.			PID 0 βγ 50
0.5	404127	NA	6	Slightly moist.	CL	.25	
	1310 2-16-95			SAA			PID 0 βγ 50
1.0	404127	NA	6		CL	.25	
	1310 2-16-95			Stiff SAA w/ increasing silt.			PID 0 βγ 50
1.5	404127	NA	6		CL	1.5	
	1310 2-16-95			SAA			PID 0 βγ 50
2.0	404127	NA	6		CL	1.5	
	1310 2-16-95			SAA			PID 0 βγ 50
2.5	404127	NA	6		CL	1.5	
	1310 2-16-95			SAA			PID 0 βγ 50
3.0	404127	NA	6		CL	1.5	
	1310 2-16-95			SAA			PID 0 βγ 50
3.5	404127	NA	6		CL	1.5	

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2/16/95	
ALPHA	NA	NA	NA
BETA / GAMMA	50	2/16/95	

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-009

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553.

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Rotosonic | DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
3.5	1310 2-16-95 404127	NA	6	SAA	CL	1.5	PID 0 βγ 50
4.0	1310 2-16-95 404127	NA	6	very stiff 10 YR ~~SAA~~ KG 2-16-95 5/6 yellowish Brown w/ some gray mottling. silty clay w/ some sand. med plast. slightly moist	CL	2.5	PID 0 βγ 50
4.5	1310 2-16-95 404127	NA	6	~~SAA~~ KG 2-16-95 SAA	CL	2.5	PID 0 βγ 50
5.0	1315 2-16-95 404128	NA	6	stiff 10 YR 5/3 Brown w/ gray mottling - mn. conc. silty clay w/ trace of sand. med plast. slightly moist	CL	1.5	PID 0 βγ 50
5.5	1315 2-16-95 404128	NA	6	SAA	CL	1.5	PID 0 βγ 50
6.0	1315 2-16-95 404128	NA	6	SAA	CL	1.5	PID 0 βγ 50
6.5	1315 2-16-95 404128	NA	6	SAA	CL	1.5	PID 0 βγ 50
7.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G:/WPSC/94-778.DRW (11-23-9

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-010

PAGE 3 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.0	1330 2-16-95 404129	NA	6	HARD 10 Y 5/4 YELLOWISH BROWN. SILTY CLAY W/SOME SAND + TRACE OF FINE GRAVEL. MED PLAST. SLIGHTLY MOIST.	CL	4.5	PID 0 Bγ 50
7.5	1330 2-16-95 404129	NA	6	SAA	CL	4.5	PID 0 Bγ 50
8.0	1330 2-16-95 404129	NA	6	SOFT 5 Y 4/1 DARK GRAY. W/SOME BROWN SEAMS. SILTY CLAY W/TRACE OF SAND + FINE GRAVEL. MED PLAST. SLIGHTLY MOIST.	CL	.5	PID 0 Bγ 50
8.5	1330 2-16-95 404129	NA	6	SAA	CL	.5	PID 0 Bγ 50
9.0	1330 2-16-95 404129	NA	6	STIFF 5Y 4/1 DARK GRAY SILTY CLAY W/TRACE OF SAND + FINE GRAVEL. MED PLAST. SLIGHTLY MOIST.	CL	1.0	PID 0 Bγ 50
9.5	1330 2-16-95 404129	NA	6	SAA	CL	1.0	PID 0 Bγ 50
10.0	1330 2-16-95 404129	NA	6	SAA	CL	1.0	PID 0 Bγ 50
10.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

CONTROL NO.: 500332-31553-011

FEMP

LITHOLOGIC LOG

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
10.5							
11.0	1330 2-16-95 404128	NA	6	SAA	CL	1.0	PID 0 Bγ 50
11.5	1330 2-16-95 404129	NA	6	SAA	CL	1.0	PID 0 Bγ 50
12.0	1330 2-16-95 404129	NA	6	SAA	CL	1.0	PID 0 Bγ 50
12.5	1335 2-16-95 404130	NA	6	SAA	CL	1.0	PID 0 Bγ 50
13.0	1335 2-16-95 404130	NA	6	SAA	CL	1.0	PID 0 Bγ 50
13.5	1335 2-16-95 404130	NA	6	SAA	CL	1.0	PID 0 Bγ 50
14.0	1335 2-16-95 404130	NA	6	SAA	CL	1.0	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-012

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fouztner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
14.0							
14.5	1335 2-16-95 4C4130	NA	6	SAA	CL	1.5	PID 0 Bg50
15.0	1335 2-16-95 4C4130	NA	6	SAA	CL	1.5	PID 0 Bg50 Rd114
15.5	1335 2-16-95 4C4130	NA	6	HARD SAA	CL	4.0	PID 0 Bg50
16.0	1335 2-16-95 4C4130	NA	6	SAA	CL	4.0	PID 0 Bg50
16.5	1335 2-16-95 4C4130	NA	6	SAA	CL	4.0	PID 0 Bg50
17.0	1335 2-16-95 4C4130	NA	6	SAA	CL	4.0	PID 0 Bg50
17.5	1400 2-16-95 4C4131	NA	6	stiff SAA	CL	1.5	PID 0 Bg50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-013

PAGE 6 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
17.5							
18.0	1460 2-16-95 404131	NA	6	SAA	CI	1.5	PID 0. Bγ 50 RINSATE-200126597
18.5	1400 2-16-95 404131	NA	6	SAA	CI	1.0	PID 0 Bγ 50
19.0	1400 2-16-95 404131	NA	6	SAA	CI	1.0	PID 0 Bγ 50
19.5	1400 2-16-95 404131	NA	6	SAA	CI	1.0	PID 0 Bγ 50
20.0	1400 2-16-95 404131	NA	6	SAA	CI	1.0	PID 0 Bγ 50
20.5	1400 2-16-95 404131	NA	6	SAA	CI	1.0	PID 0 Bγ 50
21.0	1400 2-16-95 404131	NA	6	SAA	CI	1.0	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

000152

G:/WPSC/94-776.DRW (11-23-94

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-014	PAGE 7 OF 54
PROJECT NAME: South Field Pump Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31553	COORDINATES: NA
RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA
DATE STARTED: 2/16/95	
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA
DATE COMPLETED: 2/24/95	
WATER USED DURING DRILLING: 1709 gal	DRILLING CONTRACTOR: Alliance
DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fortner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
21.0							
21.5	1400 2-16-95 404131	NA	6	SAA	CI	1.0	PID 0 Bγ 50
22.0	1400 2-16-95 404131	NA	6	SAA	CI	1.0	PID 0 Bγ 50
22.5	1405 2-16-95 404132	NA	6	10YR 4/4 DARK Yellowish Brown. Poorly graded med sand w/coarse sand + fine gravel. DRY	SP	NA	PID 0 Bγ 50
23.0	1405 2-16-95 404132	NA	6	SAA	SP	NA	PID 0 Bγ 50
23.5	1405 2-16-95 404132	NA	6	SAA	SP	NA	PID 0 Bγ 50
24.0	1405 2-16-95 404132	NA	6	SAA	SP	NA	PID 0 Bγ 50
24.5	1405 2-16-95 404132	NA	6	SAA	SP	NA	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

CONTROL NO.: 500332-31553-015

FEMP

LITHOLOGIC LOG

PAGE 8 OF 56

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA DATE: NA TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA DATE: NA TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.5							
25.0	1405 2-16-95 404132	NA	6	SAA	SP	NA	PiDO Bγ50
25.5	1405 2-16-95 404132	NA	6	SAA	SP	NA	PiDO Bγ50
26.0	1405 2-16-95 404132	NA	6	SAA	SP	NA	PiDO Bγ50
26.5	1405 2-16-95 404132	NA	6	SAA	SP	NA	PiDO Bγ50
27.0	1405 2-16-95 404132	NA	6	SAA	SP	NA	PiDO Bγ50 SiEVE-200126579
27.5	1420 2-16-95 404133	NA	6	10YR 4/4 DARK YELLOWISH BROWN ~~WELL~~ Poorly GRADED SAND w/ FINE GRAVEL DRY ~~SW~~ KG 2-16-95	SP ~~SW~~ KG 2-16-95	NA	PiDO Bγ50
28.0	1420 2-16-95 4[illegible]	NA	6	SAA	SP ~~SW~~ KG 2-16-95	NA	PiDO Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

000154

G:/WPSC/94-776.DRW (11-23-94

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-016

PAGE 9 OF 561

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553.

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Blower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
28.0							
28.5	1420 2-16-95 4C4133	NA	6	SAA	SP ~~SW~~ KG 2-16-95	NA	P.D 0 Bg 50
29.0	1420 2-16-95 4C4133	NA	6	SAA	SP ~~SW~~ KG 2-16-95	NA	P.D 0 Bg 50
29.5	1420 2-16-95 4C4133	NA	6	SAA	SP ~~SW~~ KG 2-16-95	NA	P.D 0 Bg 50
30.0	1420 2-16-95 4C4133	NA	6	SAA	SP ~~SW~~ KG 2-16-95	NA	P.D 0 Bg 50
30.5	1420 2-16-95 4C4133	NA	6	SAA	SP ~~SW~~ KG 2-16-95	NA	P.D 0 Bg 50
31.0	1420 2-16-95 4C4133	NA	6	SAA	SP ~~SW~~ KG 2-16-95	NA	P.D 0 Bg 50
31.5	1420 2-16-95 4C4133	NA	6	SAA	SP ~~SW~~ KG 2-16-95	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-017

PAGE 10 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.5							
32.0	1420 2-16-95 404133	NA	6	SAA	SP ~~SW~~ KB 2-16-95	NA	P.D 0 Bγ 50
32.5	1425 2-16-95 404134	NA	6	SAA	SP ~~SW~~ KB 2-16-95	NA	P.D 0 Bγ 50
33.0	1425 2-16-95 404134	NA	6	SAA	SP ~~SW~~ KB 2-16-95	NA	P.D 0 Bγ 50
33.5	1425 2-16-95 404134	NA	6	10YR 5/4 yellowish brown poorly graded fine sand. Trace of fine gravel. DRY	SP	NA	P.D 0 Bγ 50
34.0	1425 2-16-95 404134	NA	6	SAA	SP	NA	P.D 0 Bγ 50
34.5	1425 2-16-95 404134	NA	6	SAA	SP	NA	P.D 0 Bγ 50
35.0	1425 2-16-95 404134	NA	6	SAA	SP	NA	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

000156

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-018

PAGE 11 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES:

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
35.0							
35.5	1425 2-16-95 404134	NA	6	SAA	SP	NA	PiDC Bγ50
36.0	1425 2-16-95 404134	NA	6	SAA	SP	NA	PiDC Bγ50
36.5	1425 2-16-95 404134	NA	6	SAA	SP	NA	PiDC Bγ50
37.0	1425 2-16-95 404134	NA	6	SAA	SP	NA	PiDC Bγ50 Sieve 200126580
37.5	1450 2-16-95 404135	NA	6	10YR 5/4 Yellowish Brown poorly graded fine sand w/ trace fine gravel dry	SP	NA	PiDC Bγ50
38.0	1450 2-16-95 404135	NA	6	SAA	SP	NA	PiDC Bγ50
38.5	1450 2-16-95 404135	NA	6	SAA	SP	NA	PiDC Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-019

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
38.5							
	1450 2-16-95 404135	NA	6	SAA	SP	NA	P.D O Bg 50
39.0							
	1450 2-16-95 404135	NA	6	SAA	SP	NA	P.D O Bg 50
39.5							
	1450 2-16-95 404135	NA	6	SAA	SP	NA	P.D O Bg 50
40.0							
	1450 2-16-95 404135	NA	6	SAA	SP	NA	P.D O Bg 50
40.5							
	1450 2-16-95 404135	NA	6	SAA	SP	NA	P.D O Bg 50
41.0							
	1450 2-16-95 404135	NA	6	SAA	SP	NA	P.D O Bg 50
41.5							
	1450 2-16-95 404135	NA	6	SAA	SP	NA	P.D O Bg 50
42.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1	NA	
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500322-31553-020

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553.

COORDINATES:

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
42.0							
	1455 2-16-95 4C4136	NA	6	SAA	SP	NA	P.D 0 Bg 50
42.5							
	1455 2-16-95 4C4136	NA	6	SAA	SP	NA	P.D 0 Bg 50
43.0							
	1455 2-16-95 4C4136	NA	6	SAA	SP	NA	P.D 0 Bg 50
43.5							
	1455 2-16-95 4C4136	NA	6	SAA	SP	NA	P.D 0 Bg 50
44.0							
	1455 2-16-95 4C4136	NA	6	SAA	SP	NA	P.D 0 Bg 50
44.5							
	1455 2-16-95 4C4136	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.0							
	1455 2-16-95 4C4136	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See Log 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See Log 1		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-02ϕ

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Lotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
45.5	1455 2-16-95			SAA			P.D 0 Bg 50
46.0	404136	NA	6		SP	NA	SVEU-20026591
46.5	1455 2-16-95 404136	NA	6	10YR 6/3 pale brown. powdered rock + gravel. DRY	NA	NA	P.D 0 Bg 50
47.0	1455 2-16-95 404136	NA	6	SAA	NA	NA	P.D 0 Bg 50
47.5	1530 2-16-95 404137	NA	6	10YR 7/3 very pale brown. poorly graded very fine clayey sand. w/some fine gravel. DRY	SP	NA	P.D 0 Bg 50 pieces cemented possibly from drilling
48.0	1530 2-16-95 404137	NA	6	SAA	SP	NA	P.D 0 Bg 50
48.5	1530 2-16-95 404137	NA	6	SAA	SP	NA	P.D 0 Bg 50
49.0	1530 2-16-95 404137	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See 191		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-022

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
49.0							
49.5	1530 2-16-95 404137	NA	6	SAA	SP	NA	P.D 0 Bg 50
50.0	1530 2-16-95 404137	NA	6	SAA	SP	NA	P.D 0 Bg 50
50.5	1530 2-16-95 404137	NA	6	SAA	SP	NA	P.D 0 Bg 50
51.0	1530 2-16-95 404137	NA	6	SAA	SP	NA	P.D 0 Bg 50
51.5	1530 2-16-95 404137	NA	6	SAA	SP	NA	P.D 0 Bg 50
52.0	1530 2-16-95 404137	NA	6	SAA	SP	NA	P.D 0 Bg 50
52.5	1535 2-16-95 404138	NA	6	10 YR 4/4 DARK Yellowish Brown Poorly graded fine sand w/ fine to coarse gravel DRY	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

WATER COLLECTED PER ASTM STANDARD PENETRATION TEST

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-023

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553.

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal. | DRILLING CONTRACTOR: Alliance | DRILLING EQUIPMENT: Kotosonic | DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
52.5							
	1535 2-16-95 404138	NA	6	SAA	SP	NA	P.D 0 Bg 50
53.0							
	1535 2-16-95 404138	NA	6	SAA	SP	NA	P.D 0 Bg 50
53.5							
	1535 2-16-95 404138	NA	6	SAA	SP	NA	P.D 0 Bg 50
54.0							
	1535 2-16-95 404138	NA	6	SAA	SP	NA	P.D 0 Bg 50
54.5							
	1535 2-16-95 404138	NA	6	SAA	SP	NA	P.D 0 Bg 50
55.0							
	1535 2-16-95 404138	NA	6	SAA	SP	NA	P.D 0 Bg 50
55.5							
	1535 2-16-95 404138	NA	6	SAA	SP	NA	P.D 0 Bg 50
56.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See Pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See Pg 1		

NOTES: None

CONTROL NO.: 500332-31553-024

FEMP
LITHOLOGIC LOG

PAGE 17 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.0332

BORING NUMBER: 31553

COORDINATES:

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
56.0	1535 2-16-95 404138	NA	6	10 YR 4/3 DARK BROWN. SILTY SANDY CLAY. WITH SOME FINE GRAVEL. MED PLAST. SLIGHTLY MOIST	CL	1.75 KB 2-16-95 NA	PiDo Bγ50
56.5	1535 2-16-95 404138	NA	6	SAA	CL	1.75 KB 2-16-95 NA	PiDo Bγ50 SIEVE - 2041 26592
57.0	1540 2-16-95 404139	NA	6	10 YR 4/4 DARK YELLOWISH BROWN WELL GRADED SAND W/ FINE TO COURSE GRAVEL. WET	SW	NA	PiDo Bγ50
57.5	1540 2-16-95 404139	NA	6	SAA	SW	NA	PiDo Bγ50
58.0	1540 2-16-95 404139	NA	6	SAA	SW	NA	PiDo Bγ50
58.5	1540 2-16-95 404139	NA	6	SAA	SW	NA	PiDo Bγ50
59.0	1540 2-16-95 404139	NA	6	SAA	SW	NA	PiDo Bγ50
59.5	1540 2-16-95 404139	NA	6	SAA	SW	NA	PiDo Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: 59.5'-60.0' Same as 57.0' to 59.5'

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-025

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Kotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
60.4	1540 2-16-95 404139	NA	6	SAA	SW	NA	P.D0 Bg50
60.5	1540 2-16-95 404139	NA	6	SAA	SW	NA	P.D0 Bg50
61.0	1540 2-16-95 404139	NA	6	SAA	SW	NA	P.D0 Bg50 ~~Total U 200126570~~ KG 2-16-95
61.5	1540 2-16-95 404139	NA	6	SAA	SW	NA	P.D0 Bg50 Total U 200126570
62.0	910 2-17-95 404140	NA	6	10YR 4/4 Dark Yellowish Brown well Graded Sand with Some Fine Gravel, wet	SW	NA	P.D0 Bg50
62.5	910 2-17-95 404140	NA	6	SAA	SW	NA	P.D0 Bg50
63.0	910 2-17-95 404140	NA	6	10YR 4/4 Dark Yellowish Brown poorly Graded Fine Sand with a trace of Fine Gravel, wet	SP	NA	P.D0 Bg50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2-17-95	8:30
ALPHA	NA	NA	NA
BETA / GAMMA	50	2-17-95	8:30

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-026	PAGE 19 OF 54
PROJECT NAME: South Field Pump Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31553	COORDINATES: NA
RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE STARTED: 2/16/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE COMPLETED: 2/24/95
WATER USED DURING DRILLING: 170 gal	DRILLING CONTRACTOR: Alliance / DRILLING EQUIPMENT: Rotosonic / DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
63.5							
64.0	910 2-17-95 404140	NA	6	SAA	SP	NA	P.D 0 Bγ 50
64.5	910 2-17-95 404140	NA	6	SAA	SP	NA	P.D 0 Bγ 50
65.0	910 2-17-95 404140	NA	6	SAA	SP	NA	P.D 0 Bγ 50
65.5	910 2-17-95 404140	NA	6	SAA	SP	NA	P.D 0 Bγ 50
66.0	910 2-17-95 404140	NA	6	SAA	SP	NA	P.D 0 Bγ 50
66.5	910 2-17-95 404140	NA	6	10YR 4/4 Dark Yellowish Brown Poorly Graded Fine Sand with Coarse Sand and Fine Gravel wet	SP	NA	P.D 0 Bγ 50
67.0	910 2-17-95 404140	NA	6	SAA	SP	NA	P.D 0 Bγ 50 J.O.K - 2001265 93 J.O.K - 2001265 72

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-027

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Lotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
67.0	1230 2-17-95			10 YR 4/4 DARK YELLOWISH BROWN Poorly graded med sand w/ some coarse sand + fine gravel, wet.	SP	NA	P.D Bg ~~Sieve 200LCF 89~~ KG 2-17-95 ~~Sieve 200LCF 73~~ KG 2-17-95
67.5	404141	NA	6				
68.0	1230 2-17-95 404141	NA	6	SA	SP	NA	P.D O Bg 50
68.5	1230 2-17-95 404141	NA	6	SAA	SP	NA	P.D O Bg 50
69.0	1230 2-17-95 404141	NA	6	SAA	SP	NA	P.D O Bg 50
69.5	1230 2-17-95 404141	NA	6	SAA	SP	NA	P.D O Bg 50
70.0	1230 2-17-95 404141	NA	6	SAA	SP	NA	P.D O Bg 50
70.5	1230 2-17-95 404141	NA	6	10 YR 4/4 DARK YELLOWISH BROWN. Poorly graded coarse sand w/ fine gravel. wet.	SP	M	P.D O Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-028

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1209 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Faulkner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
70.5							
	1230 2-17-95 404141	NA	6	SAA	SP	NA	P.D 0 Bg 50
71.0							
	1230 2-17-95 404141	NA	6	SAA	SP	NA	P.D 0 Bg 50
71.5							
	1230 2-17-95 404141	NA	6	SAA	SP	M	P.D 0 Bg 50
72.0							
	1235 2-17-95 404142	NA	6	10 YR 4/4 DARK Yellowish Brown. Poorly graded med SAND w/ fine gravel wet.	SP	M	P.D 0 Bg 50
72.5							
	1235 2-17-95 404142	NA	6	SAA	SP	A	P.D 0 Bg 50
73.0							
	1235 2-17-95 404142	NA	6	10 YR 4/4 DARK Yellowish Brown. Poorly graded coarse SAND w/ fine gravel. wet	SP	NA	P.D 0 Bg 50
73.5							
	1235 2-17-95 404142	NA	6	SAA	SP	M	P.D 0 Bg 50
74.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-029

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
74.0							
	1235 2-17-95 404142	NA	6	SAA	SP	NA	P.D 0 Bg 50
74.5							
	1235 2-17-95 404142	NA	6	SAA	SP	NA	P.D 0 Bg 50
75.0							
	1235 2-17-95 404142	NA	6	SAA	SP	NA	P.D 0 Bg 50
75.5							
	1235 2-17-95 404142	NA	6	SAA	SP	NA	P.D 0 Bg 50
76.0							
	1235 2-17-95 404142	NA	6	SAA	SP	NA	P.D 0 Bg 50
76.5							
	1235 2-17-95 404142	NA	6	SAA	SP	NA	P.D 0 Bg 50 S.Blue-2cm 126595 T.Blu-2cm 26594
77.0							
	1055 2-20-95 404143	NA	6	10 YR 3/4 DARK YELLOW-ISH BROWN POORLY GRADED MED SAND W/ COARSE SAND FINE GRAVEL WET	SP	NA	P.D 0 Bg 50
77.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-030

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
77.5	1055 2-20-95 404143	NA	6	SAA	SP	NA	P.D 0 Bg 50
78.0	1055 2-20-95 404143	NA	6	10 YR 3/4 DARK yellowish Brown well graded sand w/some fine gravel & coarse gravel. wet	SW	NA	P.D 0 Bg 50
78.5	1055 2-20-95 404143	NA	6	SAA	SW	NA	P.D 0 Bg 50
79.0	1055 2-20-95 404143	NA	6	SAA	SW	NA	P.D 0 Bg 50
79.5	1055 2-20-95 404143	NA	6	SAA	SW	NA	P.D 0 Bg 50
80.0	1055 2-20-95 404143	NA	6	SAA	SW	NA	P.D 0 Bg 50
80.5	1055 2-20-95 404143	NA	6	SAA	SW	NA	P.D 0 Bg 50
81.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2/20/95	1030
ALPHA	NA	NA	NA
BETA / GAMMA	50	2/20/95	1030

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-031

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Kotosonic

DRILLER / HELPER: Blower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.0							
31.5	1100 2-20-95 404144	NA	6	SAA	SW	NA	P.DO B.g50
32.0	1100 2-20-95 404144	NA	6	SAA	SW	NA	P.DO B.g50
32.5	1100 2-20-95 404144	NA	6	SAA	SW	NA	P.DO B.g50
33.0	1100 2-20-95 404144	NA	6	SAA	SW	NA	P.DO B.g50
33.5	1100 2-20-95 404144	NA	6	SAA	SW	NA	P.DO B.g50
34.0	1100 2-20-95 404144	NA	6	SAA	SW	NA	P.DO B.g50
34.5	1100 2-20-95 404144	NA	6	10YR 4/3 BROWN. POORLY GRADED FINE SAND WET	SP	NA	P.DO B.g50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg	18	
ALPHA	NA	NA	NA
BETA / GAMMA	See pg	18	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-032

PAGE 25 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
84.5							
85.0	1100 2-20-95 404144	NA	6	10YR 4/3 Brown well Graded Sand with Some fine To Coarse Gravel wet	SW	WA	P.D 0 Bγ 50
85.5	1100 2-20-95 404144	NA	6	SAA	SW	WA	P.D 0 Bγ 50
86.0	1100 2-20-95 404144	NA	6	SAA	SW	WA	P.D 0 Bγ 50
86.5	1100 2-20-95 404144	NA	6	SAA	SW	WA	P.D 0 Bγ 50
87.0	1100 2-20-95 404144	NA	6	SAA	SW	WA	P.D 0 Bγ 50 S.Eoi-200126597 STU-200126596
87.5	1320 2-20-95 404145	NA	6	10 YR 3/4 Dark yellowish Brown Poorly graded med Sand w/ some Coarse + fine To Course gravel. wet	SP	WA	P.D 0 Bγ 50
88.0	1320 2-20-95 404145	NA	6	SAA	SP	WA	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

CONTROL NO.: 500332-31553-033	FEMP LITHOLOGIC LOG	PAGE 26 OF 54

PROJECT NAME: South Field Pump Test		PROJECT NO.: 50.03.32
BORING NUMBER: 31553	COORDINATES: NA	RELATED FAL NO.s: NA

SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE STARTED: 2/16/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
88.0							
88.5	1320 2-20-95 404145	NA	6	SAA	SP	NA	P.D0 Bγ50
89.0	1320 2-20-95 404145	NA	6	SAA	SP	NA	P.D0 Bγ50
89.5	1320 2-20-95 404145	NA	6	SAA	SP	NA	P.D0 Bγ50
90.0	1320 2-20-95 404145	NA	6	SAA	SP	NA	P.D0 Bγ50
90.5	1320 2-20-95 404145	NA	6	SAA	SP	NA	P.D0 Bγ50
91.0	1320 2-20-95 404145	NA	6	SAA	SP	NA	P.D0 Bγ50
91.5	1320 2-20-95 404145	NA	6	SAA	SP	NA	P.D0 Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

CONTROL NO.: 500332-31553-034

FEMP
LITHOLOGIC LOG

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
91.5							
92.0	1320 2-20-95 404145	NA	6	SAA	SP	NA	PiDo Bγ50
92.5	1325 2-20-95 404146	NA	6	10 YR 3/4 DARK YELLOWISH BROWN POORLY GRADED VERY COARSE SAND W/SOME FINE GRAVEL WET	SP	NA	PiDo Bγ50
93.0	1325 2-20-95 404146	NA	6	SAA	SP	NA	PiDo Bγ50
93.5	1325 2-20-95 404146	NA	6	SAA	SP	NA	PiDo Bγ50
94.0	1325 2-20-95 404146	NA	6	SAA	SP	NA	PiDo Bγ50 SIEVE-200126590
94.5	1325 2-20-95 404146	NA	6	10 YR 3/4 DARK YELLOWISH BROWN POORLY GRADED FINE SAND W/ FINE GRAVEL WET	SP	NA	PiDo Bγ50
95.0	1325 2-20-95 404146	NA	6	SAA	SP	NA	PiDo Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 15		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-035

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
95.0							
95.5	1325 2-20-95 4-04146	NA	6	10 YR 3/4 DARK Yellowish Brown Poorly graded med sand w/some fine gravel. wet.	SP	NA	P.D0 Bg50
96.0	1325 2-20-95 4-04146	NA	6	SAA	SP	NA	P.D0 Bg50
96.5	1325 2-20-95 4-04146	NA	6	SAA	SP	NA	P.D0 Bg50
97.0	1325 2-20-95 4-04146	NA	6	SAA	SP	NA	P.D0 Bg50 S.Eve-200126588 Bro-200126586
97.5	1510 2-20-95 4-04147	NA	6	10 YR 3/4 DARK Yellowish Brown Poorly graded med sand w/ coarse sand + fine gravel. wet	SP	NA	P.D0 Bg50
98.0	1510 2-20-95 4-04147	NA	6	SAA	SP	NA	P.D0 Bg50
98.5	1510 2-20-95 4-04147	NA	6	SAA	SP	NA	P.D0 Bg50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-036

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES:

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Kotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
98.5	1510 2-20-95 404147	NA	6	SAA	SP	NA	P.D 0 Bg 50
99.0	1510 2-20-95 404147	NA	6	SAA	SP	NA	P.D 0 Bg 50
99.5	1510 2-20-95 404147	NA	6	SAA	SP	NA	P.D 0 Bg 50
100.0	1510 2-20-95 404147	NA	6	SAA	SP	NA	P.D 0 Bg 50
100.5	1510 2-20-95 404147	NA	6	SAA	SP	NA	P.D 0 Bg 50
101.0	1510 2-20-95 404147	NA	6	SAA	SP	NA	P.D 0 Bg 50
101.5	1510 2-20-95 404147	NA	6	SAA	SP	NA	P.D 0 Bg 50
102.0	1510 2-20-95 404147	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-037

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
102.0							
102.5	1515 2-20-95 404148	NA	6	SAA	SP	NA	P.D 0 B γ 50
103.0	1515 2-20-95 404148	NA	6	SAA	SP	NA	P.D 0 B γ 50
103.5	1515 2-20-95 404148	NA	6	10 Y R 3/4 DARK yellowish BROWN POORLY GRADED COARSE SAND w/ SOME FINE TO COARSE GRAVEL. WET	SP	NA	P.D 0 B γ 50
104.0	1515 2-20-95 404148	NA	6	SAA	SP	NA	P.D 0 B γ 50
104.5	1515 2-20-95 404148	NA	6	SAA	SP	NA	P.D 0 B γ 50
105.0	1515 2-20-95 404148	NA	6	SAA	SP	NA	P.D 0 B γ 50
105.5	1515 2-20-95 404148	NA	6	10 Y R 3/4 DARK yellowish BROWN POORLY GRADED MED SAND. FINE GRAVEL WET.	SP	NA	P.D 0 B γ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-038

PAGE 31 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
105.5	1515 2-20-95 404148	NA	6	SAA	SP	NA	PiDO Bγ50 SIEVE-200126592
106.0	1515 2-20-95 404148	NA	6	~~SAA w/ MORE COURSE~~ 10 YR 3/4 DARK Yellowish Brown. Poorly graded Fine gravel. w/ course sand. WET.	GP	NA	PiDO Bγ50 SIEVE-200126594
106.5	1515 2-20-95 404148	NA	6	10 YR 3/4 DARK Yellowish Brown poorly graded fine sand with fine gravel. WET	SP	NA	PiDO Bγ50 TOTU-200126584 SIEVE-200126598
107.0	1040 2-21-95 404149	NA	6	2.5 Y 3/3 DARK Olive Brown. Well graded sand w/ fine gravel. WET.	SW	NA	PiDO Bγ50
107.5	1040 2-21-95 404149	NA	6	SAA	SW	NA	PiDO Bγ50
108.0	1040 2-21-95 404149	NA	6	SAA	SW	NA	PiDO Bγ50
108.5	1040 2-21-95 404149	NA	6	SAA	SW	NA	PiDO Bγ50
109.0	1040 2-21-95 404149	NA	6	SAA	SW	NA	PiDO Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

000177

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-039

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
109.0	1040 2-21-95 404149	NA	6	SAA	SW	NA	P.D 0 Bg 50
110.0	1040 2-21-95 404149	NA	6	SAA	SW	NA	P.D 0 Bg 50
110.5	1040 2-21-95 404149	NA	6	SAA	SW	NA	P.D 0 Bg 50
111.0	1040 2-21-95 404149	NA	6	SAA	SW	NA	P.D 0 Bg 50
111.5	1040 2-21-95 404149	NA	6	SAA	SW	NA	P.D 0 Bg 50
112.0	1040 2-21-95 404149	NA	6	SAA	SW	NA	P.D 0 Bg 50
112.5	1045 2-21-95 404150	NA	6	SAA	SW	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 13		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 13		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-040

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
112.5							
113.0	1045 2-21-95 404150	NA	6	SAA	SW	NA	P.D 0 Bg 50
113.5	1045 2-21-95 404150	NA	6	2.5Y 3/3 DARK OLIVE BROWN. POORLY GRADED FINE SAND W/FINE GRAVEL. WET	SP	NA	P.D 0 Bg 50
114.0	1045 2-21-95 404150	NA	6	SAA	SP	NA	P.D 0 Bg 50
114.5	1045 2-21-95 404150	NA	6	SAA	SP	NA	P.D 0 Bg 50
115.0	1045 2-21-95 404150	NA	6	SAA	SP	NA	P.D 0 Bg 50
115.5	1045 2-21-95 404150	NA	6	2.5Y 3/3 DARK OLIVE BROWN WELL GRADED SAND W/FINE TO COARSE GRAVEL. WET	SW	NA	P.D 0 Bg 50
116.0	1045 2-21-95 404150	NA	6	SAA	SW	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 50 0332-31553-041

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
116.0							
116.5	1045 2-21-95 404150	NA	6	SAA	SW	NA	P.D 0 Bγ 50
117.0	1045 2-21-95 404150	NA	6	SAA	SW	NA	P.D 0 Bγ 50 TOT/U - 200126589 S.EVE - 200126599
117.5	1325 2-21-95 404151	NA	6	5Y 3/1 very dark gray. poorly graded med sand w/ trace fine gravel wet	SP	NA	P.D 0 Bγ 50
118.0	1325 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bγ 50
118.5	1325 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bγ 50
119.0	1325 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bγ 50
119.5	1330 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-042

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
119.5							
120.0	1330 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bg 50
120.5	1330 2-21-95 404151	NA	6	5Y 3/1 very dark gray. Poorly graded coarse sand w/ fine to coarse gravel. wet.	SP	NA	P.D 0 Bg 50
121.0	1330 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bg 50
121.5	1330 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bg 50
122.0	1330 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bg 50
122.5	1330 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bg 50
123.0	1330 2-21-95 404151	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-043

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
123.0							
	1330 2-21-95			SAA			P.D 0 Bg 50
123.5	404151	NA	6		SP	NA	
	1330 2-21-95			SAA			P.D 0 Bg 50
124.0	404151	NA	6		SP	NA	
	1330 2-21-95			SAA			P.D 0 Bg 50
124.5	404151	NA	6		SP	NA	
	1330 2-21-95			SAA			P.D 0 Bg 50
125.0	404151	NA	6		SP	NA	
	1330 2-21-95			SAA			P.D 0 Bg 50
125.5	404151	NA	6		SP	NA	
	1330 2-21-95			SAA			P.D 0 Bg 50
126.0	404151	NA	6		SP	NA	
	1330 2-21-95			SAA			P.D 0 Bg 50
126.5	404151	NA	6		SP	NA	

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-044

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
126.5							
	1320 2-21-95			SAA			P.D 0 Bg 50
127.0	404151	NA	6		SP	NA	TOTAL - 20012659 1 SIEVE - 20012660
	1020 2-22-95			5Y 3/2 DARK olive GRAY. Poorly GRADED MED SAND w/ SOME FINE gravel. WET.			P.D 0
127.5	404152	NA	6		SP	NA	Bg 50
	1020 2-22-95		6	SAA	SP	NA	P.D 0 Bg 50
128.0	404152	NA					
	1020 2-22-95		6	SAA	SP	NA	P.D 0 Bg 50
128.5	404152	NA					
	1020 2-22-95		6	SAA	SP	NA	P.D 0 Bg 50
129.0	404152	NA					
	1020 2-22-95		6	SAA	SP	NA	P.D 0 Bg 50
129.5	404152	NA					
	1020 2-22-95		6	SAA	SP	NA	P.D 0 Bg 50
130.0	404152	NA					

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2-22-95	900
ALPHA	NA	NA	NA
BETA / GAMMA	50	2-22-95	900

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-045

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
130.0							
130.5	1020 2.22.95 404152	NA	6	5Y 3/2 DARK OLIVE GRAY WELL GRADED SAND w/ FINE TO COARSE GRAVEL. WET	SW	NA	P.D 0 Bg 50
131.0	1020 2.22.95 404152	NA	6	SAA	SW	NA	P.D 0 Bg 50
131.5	1020 2.22.95 404152	NA	6	SAA	SW	NA	P.D 0 Bg 50
132.0	1020 2.22.95 404152	NA	6	SAA	SW	NA	P.D 0 Bg 50
132.5	1025 2.22.95 404153	NA	6	SAA	SW	NA	P.D 0 Bg 50
133.0	1025 2.22.95 404153	NA	6	SAA	SW	NA	P.D 0 Bg 50
133.5	1025 2.22.95 404153	NA	6	5Y 3/2 DARK OLIVE GRAY POORLY GRADED COARSE SAND w/ FINE GRAVEL. WET.	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 37		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 37		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-046

PAGE 39 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 50.03.32

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
133.5							
134.0	1025 2 22 95 404153	NA	6	SAA	SP	NA	PiDO Bγ50
134.5	1025 2 22 95 404153	NA	6	SAA	SP	NA	PiDO Bγ50
135.0	1025 2 22 95 404153	NA	6	SAA	SP	NA	PiDO Bγ50
135.5	1025 2 22 95 404153	NA	6	5Y 3/2 DARK OLIVE GRAY. POORLY GRADED FINE SAND W/ SOME FINE TO COURSE GRAVEL. WET.	SP	NA	PiDO Bγ50
136.0	1025 2 22 95 404153	NA	6	SAA	SP	NA	PiDO Bγ50
136.5	1025 2 22 95 404153	NA	6	SAA	SP	NA	PiDO Bγ50
137.0	1025 2 22 95 404153	NA	6	SAA	SP	NA	PiDO Bγ50 TOT/U-200126593 SIEVE-200126601

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg	37	
ALPHA	NA	NA	NA
BETA / GAMMA	See pg	37	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-047

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
137.0							
137.5	1335 2-22-95 404154	NA	6	2.5Y 3/3 Dark Olive Brown Poorly Graded Fine Sand Trace of Fine Gravel WET	SP	NA	P.D 0 Bg 50
138.0	1335 2-22-95 404154	NA	6	SAA	SP	NA	P.D 0 Bg 50
138.5	1335 2-22-95 404154	NA	6	SAA	SP	NA	P.D 0 Bg 50
139.0	1335 2-22-95 404154	NA	6	SAA	SP	NA	P.D 0 Bg 50
139.5	1335 2-22-95 404154	NA	6	SAA	SP	NA	P.D 0 Bg 50
140.0	1335 2-22-95 404154	NA	6	SAA	SP	NA	P.D 0 Bg 50
140.5	1335 2-22-95 404154	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 37		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 37		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-048

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
140.5							
141.0	1335 2-22-95 404154	NA	6	SAA	SP	NA	P.D 0 Bg 50
141.5	1335 2-22-95 404154	NA	6	2.5Y 3/3 Dark olive Brown well Graded Sand with fine and coarse Gravel and cobble wet	SW	NA	P.D C Bg 50
142.0	1335 2-22-95 404154	NA	6	SAA	SW	NA	P.D C Bg 50
142.5	1340 2-22-95 404156	NA	6	2.5Y 3/2 Very Dark Grayish Brown Very Clayey Silt with Trace Fine Gravel wet	ML	1.2 ~~NA~~	P.D 0 Bg 50
143.0	1340 2-22-95 404156	NA	6	SAA with more clay	ML	1.2 ~~NA~~	P.D C Bg 50
143.5	1340 2-22-95 404156	NA	6	SAA	ML	1.2 ~~NA~~	P.D C Bg 50
144.0	1340 2-22-95 404156	NA	6	SAA	ML	1.2 ~~NA~~	P.D C Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg	37	
ALPHA	NA	NA	NA
BETA / GAMMA	See pg	37	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-049

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES:

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
144.0	1340 2-22-95 404154	NA	6	2.5Y 3/3 Dark Olive Brown Poorly Graded Fine Sand with Some Fine and Coarse Gravel wet	SP	NA	P.D 0 Bγ 50
144.5	1340 2-22-95 404156	NA	6	SAA	SP	NA	P.D 0 Bγ 50
145.0	1340 2-22-95 404156	NA	6	SAA	SP	NA	P.D 0 Bγ 50
145.5	1340 2-22-95 404156	NA	6	SAA	SP	NA	P.D 0 Bγ 50
146.0	1340 2-22-95 404156	NA	6	2.5Y 4/4 Olive Brown Poorly Graded Medium Sand with Some Coarse Sand and Fine Gravel, wet	SP	NA	P.D 0 Bγ 50
146.5	1340 2-22-95 404156	NA	6	SAA	SP	NA	P.D 0 Bγ 50 Signe - 200126602 Tot-U - 200126095
147.0	1530 2-22-95 404157	NA	6	2.5Y 4/3 Olive Brown. Well graded Sand w/ Fine gravel. wet	SW	NA	P.D 0 Bγ 50
147.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg	37	
ALPHA	NA	NA	NA
BETA / GAMMA	See pg	37	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-050	PAGE 43 OF 54
PROJECT NAME: South Field Pump Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31553	COORDINATES: NA
RELATED FAL NO.: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE STARTED: 2/16/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE COMPLETED: 2/24/95
WATER USED DURING DRILLING: 1709 gal.	DRILLING CONTRACTOR: Alliance / DRILLING EQUIPMENT: Rotosonic / DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
147.5	1530 2 22 95 404157	NA	6	SAA	SW	NA	PID C Bg SC
148.0	1530 2 22 95 404157	NA	6	SAA W/ MORE GRAVEL.	SW	M	PID C Bg SC
148.5	1530 2 22 95 404157	NA	6	SAA	SW	NA	PID C Bg SC
149.0	1530 2 22 95 404157	NA	6	2.5Y 4/3 olive Brown. poorly graded fine sand w/ trace of fine gravel. wet.	SP	NA	PID C Bg SC
149.5	1530 2 22 95 404157	NA	6	SAA	SP	NA	PID C Bg SC
150.0	1530 2 22 95 404157	NA	6	SAA	SP	NA	PID C Bg SC
150.5	1530 2 22 95 404157	NA	6	SAA	SP	NA	PID C Bg SC
151.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg	37	
ALPHA	NA	NA	NA
BETA / GAMMA	See pg	37	

NOTES: NONE

CONTROL NO.: 500332-31553-051	FEMP LITHOLOGIC LOG	PAGE 44 OF 54

PROJECT NAME: Southfield Pumping Test	PROJECT NO.: 50.03.32

BORING NUMBER: 31553	COORDINATES: NA	RELATED FAL NO.s: NA

SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE STARTED: 2/16/95
GEOLOGIST: Ken Geigen	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Lotusonic	DRILLER / HELPER: Brower / Fortner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
151.0 – 151.5	1530 2-22-95 404157	NA	6	SAA	SP	NA	PID 0 Br 50
152.0	1530 2-22-95 404157	NA	6	SAA	SP	NA	PD 0 Br 50
152.5	1535 2-22-95 404158	NA	6	SAA NO GRAVEL.	SP	NA	PD 0 Br 50
153.0	1535 2-22-95 404158	NA	6	SAA	SP	NA	PD 0 Br 50
153.5	1535 2-22-95 404158	NA	6	SAA	SP	NA	PD 0 Br 50
154.0	1535 2-22-95 404158	NA	6	SAA	SP	NA	PD 0 Br 50
154.5	1535 2-22-95 404158	NA	6	SAA	SP	NA	PD 0 Br 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg	37	
ALPHA	NA	NA	NA
BETA / GAMMA	See pg	37	

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94

000190

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-052

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50,03 32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1700 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ROTOSONIC

DRILLER / HELPER: Brown/Fontaine

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
154.5	1535 2.22.95	NA	6	SAA	SP	NA	PID 0 BY 50
155.0	404158						
155.5	1535 2.22.95 404158	NA	6	SAA	SP	NA	PID 0 BY 50
156.0	1535 2.22.95 404158	NA	6	SAA	SP	NA	PID 0 BY 50
156.5	1535 2.22.95 404158	NA	6	SAA	SP	NA	PID 0 BY 50
157.0	1535 2.22.95 404158	NA	6	SAA	SP	NA	PID 0 BY 50 TOV--200126603 SIEVE-200126604
157.5	1000 2.23.95 404159	NA	6	2.5Y 3/3 DARK OLIVE BROWN. POORLY GRADED FINE SAND TRACE FINE GRAVEL WET	SP	NA	PID 0 BY 50
158.0	1000 2.23.95 404159	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg	37	
ALPHA	NA	NA	NA
BETA / GAMMA	See pg	37	

NOTES: None

CONTROL NO.: 500332-31553-053

FEMP

LITHOLOGIC LOG

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: Na

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: RoTosonic

DRILLER/HELPER: Brown/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
158.0	1000 2-23-95	NA	6	SAA	SP	NA	PID 0 BY 50
158.5	404159						
	1000 2-23-95	NA	6	SAA	SP	NA	PID 0 BY 50
159.0	404159						
	1000 2-23-95	NA	6	SAA	SP	NA	PID 0 BY 50
159.5	404159						
	1000 2-23-95	NA	6	SAA	SP	NA	PID 0 BY 50
160.0	404159						
	1000 2-23-95	NA	6	SAA	SP	NA	PID 0 BY 50
160.5	404159						
	1000 2-23-95	NA	6	SAA	SP	NA	PID 0 BY 50
161.0	404159						
	1000 2-23-95	NA	6	SAA	SP	NA	PID 0 BY 50
161.5	404159						

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 37		
ALPHA	NA	NA	NA
BETA/GAMMA	See pg 37		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.:	500332-31553-054
PAGE	47 OF 54
PROJECT NAME:	South Field Pumping Test
PROJECT NO.:	50.03.32
BORING NUMBER:	31553
COORDINATES:	NA
RELATED FAL NO.s:	NA
SURFACE ELEVATION:	NA
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE STARTED:	2/16/95
GEOLOGIST:	KEN GEIGER
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE COMPLETED:	2/24/95
WATER USED DURING DRILLING:	1709 gal.
DRILLING CONTRACTOR:	Alliance
DRILLING EQUIPMENT:	ROTOSONIC
DRILLER / HELPER:	BROWN/FOUNTAIN

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
161.5	1000 2-23-95	NA	6	SAA	SP	NA	PID 0 By 50
162.0	404159						
162.5	1005 2-23-95 404160	NA	6	SAA	SP	NA	PID 0 By 50
163.0	1005 2-23-95 404160	NA	6	SAA	SP	NA	PID 0 By 50
163.5	1005 2-23-95 404160	NA	6	SAA	SP	NA	PID 0 By 50
164.0	1005 2-23-95 404160	NA	6	SAA w/ SOME DARKER SAND	SP	NA	PID 0 By 50
164.5	1005 2-23-95 404160	NA	6	SAA	SP	NA	PID 0 By 50
165.0	1005 2-23-95 404160	NA	6	SAA	SP	NA	PID 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 37		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-055

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: RoTosonic

DRILLER/HELPER: Brewer/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
165.0	1005 2-23-95	NA	6	2.5Y 3/2 very dark grayish brown. Poorly graded med sand w/ coarse sand fine gravel. wet	SP	NA	PID 0 By 50
165.5	404160						
	1005 2-23-95	NA	6	SAA	SP	NA	PID 0 By 50
166.0	404160						
	1005 2-23-95	NA	6	SAA	SP	NA	PID 0 By 50
166.5	404160						
	1005 2-23-95	NA	6	SAA	SP	NA	PID 0 By 50 TOJ-200126605 S.EVE-200126606
167.0	404160						
	1100 2-23-95	NA	6	2.5Y 3/3 dark olive brown. Poorly graded fine sand. wet	SP	NA	PID 0 By 50
167.5	404161						
	1100 2-23-95	NA	6	SAA	SP	NA	PID 0 By 50
168.0	404161						
	1100 2-23-95	NA	6	SAA	SP	NA	PID 0 By 50
168.5	404161						

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 37		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 37		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

CONTROL NO.: 500332-31553—056

PEMP

LITHOLOGIC LOG

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
168.5 – 169.0	1100 2-23-95 404161	NA	6	SAA	SP	NA	PID 0 BY 50
169.0 – 169.5	1100 2-23-95 404161	NA	6	SAA	SP	NA	PID 0 BY 50
169.5 – 170.0	1100 2-23-95 404161	NA	6	SAA	SP	NA	PID 0 BY 50
170.0 – 170.5	1100 2-23-95 404161	NA	6	SAA	SP	NA	PID 0 BY 50
170.5 – 171.0	1100 2-23-95 404161	NA	6	SAA	SP	NA	PID 0 BY 50
171.0 – 171.5	1100 2-23-95 404161	NA	6	SAA	SP	NA	PID 0 BY 50
171.5 – 172.0	1100 2-23-95 404161	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg	37	
ALPHA	NA	NA	NA
BETA / GAMMA	See pg	37	

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

CONTROL NO.: 500332-31553-057

FEMP

LITHOLOGIC LOG

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: RoTosonic

DRILLER / HELPER: Brewer/Fontana

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
172.0	1105 2-23-95 404162	NA	6	SAA	SP	NA	PID 0 BY 50
172.5	1105 2-23-95 404162	NA	6	SAA	SP	NA	PID 0 BY 50
173.0	1105 2-23-95 404162	NA	6	2.5Y 3/3 DARK OLIVE BROWN. POORLY GRADED MED SAND W/ TRACE FINE GRAVEL. WET.	SP	NA	PID 0 BY 50
173.5	1105 2-23-95 404162	NA	6	SAA	SP	NA	PID 0 BY 50
174.0	1105 2-23-95 404162	NA	6	SAA 172.5-173.0	SP	NA	PID 0 BY 50
174.5	1105 2-23-95 404162	NA	6	SAA	SP	NA	PID 0 BY 50
175.0	1105 2-23-95 404162	NA	6	SAA 173-173.5	SP	NA	PID 0 BY 50
175.5	1105 2-23-95 404162	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 37		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 37		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-058

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
175.5	1105 2-23-95	NA	6	SAA	SP	NA	PID 0 By 50
176.0	404162						
176.5	1105 2-23-95 404162	NA	6	SAA	SP	NA	PID 0 By 50
177.0	1105 2-23-95 404162	NA	6	SAA	SP	NA	PID 0 By 50 Toto-20012608 Sieve-20012607
177.5	1400 2-23-95 404163	NA	6	2.5Y 4/3 Olive Brown Poorly Graded Fine Sand wet	SP	NA	PID 0 By 50
178.0	1400 2-23-95 404163	NA	6	SAA	SP	NA	PID 0 By 50
178.5	1400 2-23-95 404163	NA	6	SAA	SP	NA	PID 0 By 50
179.0	1400 2-23-95 404163	NA	6	SAA	SP	NA	PID 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 37		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 37		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

CONTROL NO.: 500332-31553-059

FEMP

LITHOLOGIC LOG

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA DATE: NA TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA DATE: NA TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brown / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
179.0	1400 2-23-95 404163	NA	6	SAA	SP	NA	PID 0 BZ 50
179.5	1400 2-23-95 404163	NA	6	SAA	SP	NA	PID 0 BZ 50
180.0	1400 2-23-95 404163	NA	6	SAA	SP	NA	PID 0 BZ 50
180.5	1400 2-23-95 404163	NA	6	SAA	SP	NA	PID 0 BZ 50
181.0	1400 2-23-95 404163	NA	6	2.5Y 4/3 Olive Brown Poorly Graded Sand with a Trace of Fine Gravel wet	SP	NA	PID 0 BZ 50
181.5	1400 2-23-95 404163	NA	6	SAA	SP	NA	PID 0 BZ 50
182.0	1405 2-23-95 404164	NA	6	SAA with some Coarse Gravel wet	SP	NA	PID 0 BZ 50
182.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 37		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 37		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-060

PAGE 53 OF 54

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA DATE: NA TIME: NA

DATE STARTED: 2/16/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA DATE: NA TIME: NA

DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
182.5	1405 2-23-95	NA	6	SAA	SP	NA	PID 0 By 50
183.0	404164						
183.5	1405 2-23-95 404164	NA	6	SAA	SP	NA	PID 0 By 50
184.0	1405 2-23-95 404164	NA	6	SAA	SP	NA	PID 0 By 50
184.5	1405 2-23-95 404164	NA	6	SAA	SP	NA	PID 0 By 50
185.0	1405 2-23-95 404164	NA	6	SAA	SP	NA	PID 0 By 50
185.5	1405 2-23-95 404164	NA	6	SAA	SP	NA	PID 0 By 50
186.0	1405 2-23-95 404164	NA	6	SAA	SP	NA	PID 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See p7	37	
ALPHA	NA	NA	NA
BETA / GAMMA	See p9	37	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31553-061

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31553

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/16/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/24/95

WATER USED DURING DRILLING: 1709 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
186.0	1405 2-23-95 404164	NA	6	4/4 Olive Brown Clayey silt with some coarse sand and fine gravel	ML	NA	PID @ BY 50
187.0	1405 2-23-95 404164	NA	6	weathered Shale	NA	NA	PID @ BY 50 TOU - 200126610 SEVS - 200126609 DUP - 200126596
		NA		187.0 Bottom of Boring			PID BY
		NA					PID BY
		NA					PID BY
		NA					PID BY
		NA					PID BY

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 37		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 37		

NOTES: None

000200

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-007

PAGE 1 OF 54

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/24/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gallons

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Foyetner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
0.0 – 0.5	1310 1-27-95 404013	NA	6	stiff 10YR 4/6 Dark yellowish Brown Silty clay with a trace of sand & gravel med. Plast. slightly moist.	CL	1.5	PID 0. βγ 50
0.5 – 1.0	1310 1-27-95 404013	NA	6	SAA	CL	1.5	PID 0 βγ 50
1.0 – 1.5	1310 1-27-95 404013	NA	6	stiff 10YR 4/4 Dark yellowish Brown Silty Clay with some fine gravel with a trace of sand med. Plast. Slightly moist	CL	1.5	PID 0 βγ 50
1.5 – 2.0	1310 1-27-95 404013	NA	6	SAA	CL	1.5	PID 0 βγ 50
2.0 – 2.5	1310 1-27-95 404013	NA	6	SAA	CL	1.5	PID 0 βγ 50
2.5 – 3.0	1310 1-27-95 404013	NA	6	SAA	CL	1.5	PID 0 βγ 50
3.0 – 3.5	1310 1-27-95 404013	NA	6	SAA	CL	1.5	PID 0 βγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	1/27/95	1300
ALPHA	NA	NA	NA
BETA / GAMMA	50	1/27/95	1300

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-008

PAGE 2 OF 4

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
3.5	1310 1-27-95 404013	NA	6	SAA	CL	1.5	PID 0 β γ 50
4.0	1315 1-27-95 404010	4 x R 1/2/95 NA	6	very stiff 10YR 4/6 Dark yellowish Brown with some grey moddling with some silty clay with some sand + fine Gravel med. plast. slightly moist	CL	2.5	PID 0 β γ 50
4.5	1315 1-27-95 404010	4 x R 1/2/95 NA	6	SAA	CL	2.5	PID 0 β γ 50
5.0	1315 1-27-95 404010	4 x R 1/2/95 NA	6	SAA	CL	2.5	PID 0 β γ 50
5.5	1315 1-27-95 404014	NA	6	SAA	CL	2.5	PID 0 β γ 50
6.0	1315 1-27-95 404014	NA	6	SAA	CL	2.5	PID 0 β γ 50
6.5	1315 1-27-95 404014	NA	6	SAA	CL	2.5	PID 0 β γ 50
7.0	1315 1-27-95 404014	NA	6	SAA	CL	2.5	PID 0 β γ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 1	

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

000202

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-009

PAGE 3 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.(s): NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.0							
7.5	1420 1-27-95 404015	NA	6	very stiff 10YR 4/4 Dark yellowish Brown with some gray mottling + some Iron stains Silty clay with some sand + fine gravel med. plast. slightly moist	CL	3.5	PID 0 Bg 50
8.0	1420 1-27-95 404015	NA	6	SAA	CL	3.2	PID 0 Bg 50
8.5	1420 1-27-95 40405	NA	6	stiff SAA	CL	2.0	PID 0 Bg 50
9.0	1420 1-27-95 404015	NA	6	very stiff SAA with cobble 3"x3"x1"	CL	3.0	PID 0 Bg 50
9.5	1420 1-27-95 404015	NA	6	Hard 2.5Y 4/3 olive brown Silty clay with some sand + fine gravel + rock fragments, shale med. plast. slightly moist	CL	4.0	PID 0 Bg 50
10.0	1420 1-27-95 404015	NA	6	Hard 2.5Y 4/3 olive Brown with Heavy gray mottling Silty clay with some sand + gravel med. plast. slightly moist	CL	4.5	PID 0 Bg 50
10.5	1420 1-27-95 404015	NA	6	Hard 2.5YN4/2 Dark Gray with some brown mottling Silty clay with a trace of sand + fine gravel med. plast. slightly moist	CL	4.0	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-010

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
10.5							
11.0	1420 1-27-95 404015	NA	6	SAA	CL	4.0	PID 0 Bg 50
11.5	1420 1-27-95 404015	NA	6	SAA	CL	4.0	PID 0 Bg 50
12.0	1420 1-27-95 404015	NA	6	SAA	CL	4.0	PID 0 Bg 50
12.5	1425 1-27-95 404016	NA	6	very stiff SAA	CL	3.5	PID 0 Bg 50 Rolls
13.0	1425 1-27-95 404016	NA	6	SAA with more sand	CL	2.0	PID 0 Bg 50
13.5	1425 1-27-95 404016	NA	6	SAA	CL	2.0	PID 0 Bg 50
14.0	1425 1-27-95 404016	NA	6	stiff 5Y 4/1 Dark Gray silty clay with some sand + some fine gravel med. plast. slightly moist	CL	2.0	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881 000204

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-011

PAGE 5 OF 56

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.(s): NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fauztner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
14.0	1430 1-27-95 404017	NA	6	stiff SAA with some brown mottling	CL	1.5	PID 0 Bg 50
14.5	1430 1-27-95 404017	NA	6	SAA	CL	1.5	PID 0 Bg 50
15.0	1430 1-27-95 404017	NA	6	SAA	CL	1.5	PID 0 Bg 50
15.5	1430 1-27-95 404017	NA	6	very stiff SAA with more brown mottling	CL	3.0	PID 0 Bg 50
16.0	1430 1-27-95 404017	NA	6	10YR 5/4 yellowish brown well graded sand with some fine gravel Dry	SW	NA	PID 0 Bg 50
16.5	1430 1-27-95 404017	NA	6	SAA	SW	NA	PID 0 Bg 50 Sieve 20012164
17.0	1440 1-27-95 404018	NA	6	10YR 4/4 Dark yellowish brown well graded sand with some fine gravel Dry	SW	NA	PID 0 Bg 50
17.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SL2	1/1	
ALPHA	NA	NA	NA
BETA / GAMMA	Sole	1/1	

NOTES: NANR

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FR-F-3881

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-012

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554.

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
17.5							
18.0	1440 1-27-95 404018	NA	6	10YR 3/4 Dark Yellowish Brown Poorly graded sand with a trace of clay with some fine gravel Dry	SP	NA	PID 0 Bγ 50
18.5	1440 1-27-95 404018	NA	6	10YR 3/6 Dark yellowish brown Poorly graded sand with a trace of clay with some fine gravel Dry	SP	NA	PID 0 Bγ 50
19.0	1440 1-27-95 404018	NA	6	SAA	SP	NA	PID 0 Bγ 50
19.5	1440 1-27-95 404018	NA	6	SAA	SP	NA	PID 0 Bγ 50
20.0	1440 1-27-95 404018	NA	6*	SAA	SP	NA	PID 0 Bγ 50
20.5	1440 1-27-95 404018	NA	6	SAA	SP	NA	PID 0 Bγ 50
21.0	1440 1-27-95 404018	NA	6	SAA	SP	NA	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 1	

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-013	PAGE 7 OF 54
PROJECT NAME: South Field Pump Test	PROJECT NO.: 500332
BORING NUMBER: 31554.	COORDINATES: NA
RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE STARTED: 1/27/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA / DATE COMPLETED: 2/3/95
WATER USED DURING DRILLING: 533 gal	DRILLING CONTRACTOR: Alliance / DRILLING EQUIPMENT: Rotosonic / DRILLER / HELPER: Brower/Fortner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
21.0							
21.5	1440 1-27-95 404018	NA	6	SAA	SP	NA	PID 0 Bγ 50
22.0	1440 1-27-95 404018	NA	6	SAA	SP	NA	PID 0 Bγ 50
22.5	1445 1-27-95 404019	NA	6	SAA	SP	NA	PID 0 Bγ 50
23.0	1445 1-27-95 404019	NA	6	SAA	SP	NA	PID 0 Bγ 50
23.5	1445 1-27-95 404019	NA	6	SAA	SP	NA	PID 0 Bγ 50
24.0	1445 1-27-95 404019	NA	6	SAA	SP	NA	PID 0 Bγ 50
24.5	1445 1-27-95 404019	NA	6	SAA	SP	NA	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See Pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See Pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3991

G:/WPSC/94-778.DRW (11-23-9

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-014

PAGE 8 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.5 – 25.0	1445 1-27-95 404019	NA	6	SAA	SP	NA	P.D 0 Bγ 50
25.0 – 25.5	1445 1/27/95 404019	NA	6	SAA	SP	NA	P.D 0 Bγ 50
25.5 – 26.0	1445 1/27/95 404019	NA	6	SAA	SP	NA	P.D 0 Bγ 50 SILUR200124481
26.0 – 26.5	1445 1/27/95 404019	NA	6	SAA	SP	NA	P.D 0 Bγ 50
26.5 – 27.0	1445 1/27/95 404019	NA	6	10YR 6/3 Pale Brown well graded clayey Sand with Some Fine Gravel Dry	SW	NA	P.D 0 Bγ 50
27.0 – 27.5	NA	NA	0	NR	NA ~~SW~~ SG 1/27/95	NA	P.D 0 Bγ 50
27.5 – 28.0	NA	NA	0	NR	NA ~~SW~~ 1/27/95	NA	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

000208

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-015

PAGE 9 OF 58

PROJECT NAME: South Field Pump Test

PROJECT NO.: 500332

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)		REMARKS
28.0	1500 NR 1/27/95 ~~1-27-95~~ LR 1/27/95 30 ~~40404~~	NA	~~0~~	NR	NR	NR	P.D Bg	NR
28.5	NR	NA	0	NR	NR	NR	P.D Bg	NR
29.0	NR	NA	0	NR	NR	NR	P.D Bg	NR
29.5	NR	NA	0	NR	NR	NR	P.D Bg	NR
30.0	NR	NA	0	NR	NR	NR	P.D Bg	NR
30.5	NR	NA	0	NR	NR	NR	P.D Bg	NR
31.0	NR	NA	0	NR	NR	NR	P.D Bg	NR
31.5	NR	NA	0	NR	NR	NR	P.D Bg	NR

INSTRUMENT	BACKGROUND	DATE	TIME
PID	5 ppm		
ALPHA	NA	NA	NA
BETA / GAMMA	5 cpm		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-016

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50,03.32

BORING NUMBER: 31554.

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fouchner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.5							
32.0	NR	NA	0	NR	NA	NA	P.D B_γ NA
32.5	NR	NA	0	NR	NA	NA	P.D B_γ NA
33.0	NR	NA	0	NR	NA	NA	P.D B_γ NA
33.5	NR	NA	0	NR	NA	NA	P.D B_γ NA
34.0	NR	NA	0	NR	NA	NA	P.D B_γ NA
34.5	1500 1-27-95 40#020	NA	6	10YR 3/6 Dark yellowish Brown very clayey sand poorly graded Trace of fine gravel	SP	NA	P.D 0 B_γ 50
35.0	1500 1-27-95 40#020	NA	6	SAA	SP	NA	P.D 0 B_γ 5

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	1/91	
ALPHA	NA	NA	NA
BETA / GAMMA	See	1/91	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-017

PAGE 11 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.0332

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Foulkner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
35.0							
35.5	1500 1-27-95 404020	NA	6	SAA	SP	NA	P.D 0 Bγ 50
36.0	1500 1-27-95 404020	NA	6	SAA	SP	NA	P.D 0 Bγ 50 Sieve 2001264
36.5	1500 1-27-95 404020	NA	6	SAA	SP	NA	P.D 0 Bγ 50
37.0	1500 1-27-95 404020	NA	6	SAA	SP	NA	P.D 0 Bγ 50
37.5	LR 1/27/95 X NR	NA	0	NR	NA	NA	P.D Bγ NR
38.0	NR	NA	0	NR	NA	NA	P.D Bγ NR
38.5	NR	NA	0	NR	NA	NA	P.D Bγ NR

INSTRUMENT	BACKGROUND	DATE	TIME
PID	Sept 191		
ALPHA	NA	NA	NA
BETA / GAMMA	Sept 191		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-018

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
38.5							
39.0	NR	NA	0	NR	NC	NA	P.D Bg NA
39.5	NR	NA	0	NR	NC	NA	P.D Bg NA
40.0	NR	NA	0	NR	NC	NA	P.D Bg NA
40.5	NR	NA	0	NR	NC	NA	P.D Bg NA
41.0	NR	NA	0	NR	NC	NA	P.D Bg NA
41.5	1505 1-27-95 404021	NA	6	10YR 4/6 Dark yellowish Brown poorly graded fine sand with slight trace of clay Dry	SP	NA	P.D 0 Bg 50
42.0	1505 1-27-95 404021	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	1/9	
ALPHA	NA	NA	NA
BETA / GAMMA	000212 See	1/9	

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-019

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
42.0							
	1505 1-27-95 404021	NA	6	SAA	SP	NA	P.D 0 Bg 50
42.5							
	1505 1-27-95 404021	NA	6	SAA	SP	NA	P.D 0 Bg 50
43.0							
	1505 1-27-95 404021	NA	6	SAA	SP	NA	P.D 0 Bg 50
43.5							
	1505 1-27-95 404021	NA	6	SAA	SP	NA	P.D 0 Bg 50
44.0							
	1505 1-27-95 404021	NA	6	SAA	SP	NA	P.D 0 Bg 50
44.5							
	1505 1-27-95 404021	NA	6	SAA	SP	NA	P.D 0 Bg 50 Sl Cm 200/216 4X3
45.0							
	1505 1-27-95 404021	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	191	
ALPHA	NA	NA	NA
BETA / GAMMA	See	191	

NOTES: None

CONTROL NO.: 500332-31554-020

FEMP

LITHOLOGIC LOG

PROJECT NAME: South field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s:

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/24/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal.

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brown / Fatner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
45.5							
46.0	1505 1-27-95 404021	NA	6	10YR 4/3 Dark Brown Silty Clay Loose with fine to coarse Gravel, med. Plasticity Slightly moist	Cl	NA	PID 0 BY 50
46.5	1505 1-27-95 404021	NA	6	SAA 10YR 6/3 ~~Pale~~ Pale Brown	Cl	NA	PID 0 BY 50
47.0	1505 1-27-95 404021	NA	6	SAA	Cl	NA	PID 0 BY 50
47.5	1550 1-27-95 404022	NA	6	10YR 4/2 Dark Grayish Brown Poorly Graded fine Sand with Some fine Gravel moist to wet	SP	NA	PID 0 BY 50
48.0	1550 1-27-95 404022	NA	6	SAA	SP	NA	PID 0 BY 50
48.5	1550 1-27-95 404022	NA	6	SAA	SP	NA	PID 0 BY 50
49.0	1550 1-27-95 404022	NA	6	10YR 4/6 Dark Yellowish Brown Well Graded Clayey Sand with Some fine Gravel moist to wet	SW	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-021

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
49.0							
49.5	1555 1-27-95 404023	NA	6	10yR 4/4 Dark yellowish Brown well graded sand with some fine gravel moist	SW	NA	P.D 0 Bg 50
50.0	1555 1-27-95 404023	NA	6	SAA	SW	NA	P.D 0 Bg 50
50.5	1555 1-27-95 404023	NA	6	SAA	SW	NA	P.D 0 Bg 50
51.0	1555 1-27-95 404023	NA	6	SAA with some Coarse Gravel	SW	NA	P.D 0 Bg 50
51.5	1555 1-27-95 404023	NA	6	10yR 4/4 Dark yellowish Brown Poorly graded fine sand with some fine gravel wet	SP	NA	P.D 0 Bg 50
52.0	1555 1-27-95 404023	NA	6	SAA	SP	NA	P.D 0 Bg 50
52.5	1600 1-27-95 404024	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-022

PAGE 16 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
52.5							
53.0	1600 1-27-95 404024	NA	6	SAA	SP	NA	PiDO Bγ50
53.5	1600 1-27-95 404024	NA	6	SAA	SP	NA	PiDO Bγ50
54.0	1600 1-27-95 404024	NA	6	SAA	SP	NA	PiDO Bγ50
54.5	1600 1-27-95 404024	NA	6	SAA	SP	NA	PiDO Bγ50
55.0	1600 1-27-95 404024	NA	6	SAA	SP	NA	PiDO Bγ50
55.5	1600 1-27-95 404024	NA	6	SAA	SP	NA	PiDO Bγ50
56.0	1600 1-27-95 404024	NA	6	SAA	SP	NA	PiDO Bγ50 Siem 20012648

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

000216

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-023

PAGE 17 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.0332

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
56.0	1600 1-27-95 404024	NA	6	10YR 4/6 Dark yellowish Brown well graded sand with fine to coarse gravel wet	SW	NA	P.D 0 Bg 50
56.5	1600 1-27-95 404024	NA	6	SAA	SW	NA	P.D 0 Bg 50 TOE 4.20012649
57.0	1030 1-30-95 404025	NA	6	2.5Y 3/2 very dark Grayish Brown well graded sand with a trace of fine + coarse gravel wet	SW	NA	P.D 0 Bg 50
57.5	1030 1-30-95 404025	NA	6	SAA	SW	NA	P.D 0 Bg 50
58.0	1030 1-30-95 404025	NA	6	SAA	SW	NA	P.D 0 Bg 50
58.5	1030 1-30-95 404025	NA	6	SAA	SW	NA	P.D 0 Bg 50
59.0	1035 1-30-95 404026	NA	6	2.5 3/2 very Dark grayish Brown poorly Graded med. Sand with some fine gravel wet	SP	NA	P.D 0 Bg 50
59.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: ~~None~~ 56 1/28/95

54.5-60.0 Feet Same As 54.0-54.5 Feet.

000217

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-024

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.0332

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
60.4	1035 1-30-95			SAA	SP	NA	P.D 0 Bg 50
60.5	404026	NA	6				
	1035 1-30-95			SAA	SP	NA	P.D 0 Bg 50
61.0	404026	NA	6				
	1035 1-30-95			SAA with coarse gravel 2" x 1" x 1"	SP	NA	P.D 0 Bg 50
61.5	404026	NA	6				
	1035 1-30-95			SAA	SP	NA	P.D 0 Bg 50 Sieve 200126484
62.0	404026	NA	6				
	1035 1-30-95			2.5Y 3/2 very Dark Grayish Brown Poorly graded fine sand with a trace of fine gravel wet	SP	NA	P.D 0 Bg 50
62.5	404026	NA	6				
	1035 1-30-95			SAA	SP	NA	P.D 0 Bg 50 Roll 6
63.0	404026	NA	6				
	1040 1-30-95			SAA	SP	NA	P.D 0 Bg 50
63.5	404027	NA	6				

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	1/30/95	1030
ALPHA	NA	NA	NA
BETA / GAMMA	570000218	1/30/95	1030

NOTES: DONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 50 0332-31554-025

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.0332

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/30/95 1/27/95 CG 13:1

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
63.5	1040 1-30-95 404027	NA	6	SAA	SP	NA	P.D 0 By 50
64.0	1040 1-30-95 404027	NA	6	SAA	SP	NA	P.D 0 By 50
64.5	1040 1-30-95 404027	NA	6	SAA	SP	NA	P.D 0 By 50
65.0	1040 1-30-95 404027	NA	6	SAA	SP	NA	P.D 0 By 50
65.5	1040 1-30-95 404027	NA	6	SAA	SP	NA	P.D 0 By 50
66.0	1040 1-30-95 404027	NA	6	SAA with a trace of Silt + Clay	SP	NA	P.D 0 By 50
66.5	1040 1-30-95 404027	NA	6	SAA	SP	NA	P.D 0 By 50 Tech. 20012648 5 Sieve 20012648
67.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-026

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
67.0							
67.5	1600 1/30/95 404028	NA	6	2.5Y 3/2 very dark grayish Brown well Graded Sand with some coarse Gravel wet	SW	NA	P.D 0 Bγ 50
68.0	1600 1/30/95 404028	NA	6	SAA	SW	NA	P.D 0 Bγ 50
68.5	1605 1/30/95 404029	NA	6	SAA with more coarse Gravel	SW	NA	P.D 0 Bγ 50
69.0	1605 1/30/95 404029	NA	6	SAA	SW	NA	P.D 0 Bγ 50
69.5	1605 1/30/95 404029	NA	6	SAA	SW	NA	P.D 0 Bγ 50
70.0	1605 1/30/95 404029	NA	6	SAA	SW	NA	P.D 0 Bγ 50
70.5	1605 1/30/95 404029	NA	6	SAA	SW	NA	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See page 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See page 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-027

PAGE 21 OF 54

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/30/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
70.5							
71.0	1605 1/30/95 404029	NA	6	SAA	SW	NA	PID 0 BY 50
71.5	1605 1/30/95 404029	NA	6	SAA	SW	NA	PID 0 BY 50
72.0	1605 1/30/95 404029	NA	6	SAA	SW	NA	PID 0 BY 50 Sieve 200126488
72.5	1610 1/30/95 404030	NA	6	SAA	SW	NA	PID 0 BY 50
73.0	1610 1/30/95 404030	NA	6	2.5Y 3/2 Very Dark Grayish Brown Poorly Graded fine Sand with some Fine Gravel with a Trace of Clay wet	SP	NA	PID 0 BY 50
73.5	1610 1/30/95 404030	NA	6	SAA	SP	NA	PID 0 BY 50
74.0	1610 1/30/95 404030	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

000221

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.:	PAGE 22 OF 54
500332-31554-028	

PROJECT NAME:	PROJECT NO.:
South Field Pumping Test	50.03.32

BORING NUMBER:	COORDINATES:	RELATED FAL NO.s:
31554	NA	NA

SURFACE ELEVATION:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE STARTED:
NA	NA	NA	NA	~~1/20~~ 1/27/95

GEOLOGIST:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE COMPLETED:
Ken Geiger	NA	NA	NA	2/3/95

WATER USED DURING DRILLING:	DRILLING CONTRACTOR:	DRILLING EQUIPMENT:	DRILLER / HELPER:
533 gal	Alliance	Rotosonic	Brower / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.0							
24.5	1610 1/30/95 404030	NA	6	SAA	SP	NA	PID 0 BY 50
25.0	1610 1/30/95 404030	NA	6	SAA	SP	NA	PID 0 BY 50
25.5	1610 1/30/95 404030	NA	6	SAA	SP	NA	PID 0 BY 50
26.0	1610 1/30/95 404030	NA	6	2.5Y 3/2 very Dark Grayish Brown well Graded Clayey Sand with some fine Gravel wet	SW	NA	PID 0 BY 50
26.5	1610 1/30/95 404030	NA	6	SAA	SW	NA	PID 0 BY 50
27.0	1610 1/30/95 404030	NA	6	SAA	SW	NA	PID 0 BY 50 Sieve 200126484
27.5	1040 1/31/95 404031	NA	6	2.5Y 3/2 very Dark Grayish Brown Poorly Graded Fine Sand with some fine Gravel with a Trace of Coarse Gravel wet	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	000222 See pg 18		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-029	PAGE 23 OF 54
PROJECT NAME: South Field Pumping Test	PROJECT NO.: 30.03.32
BORING NUMBER: 31554	COORDINATES: N/A
RELATED FAL NO.s: NA	
SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: NA / DATE: N/A / TIME: NA
DATE STARTED: 1/27/95	
GEOLOGIST: KEN GEIGER	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA
DATE COMPLETED: 2/3/95	
WATER USED DURING DRILLING: 533 gal	DRILLING CONTRACTOR: Alliance
DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brewer / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
22.5							
23.0	1040 1/31/95 404031	NA	6	SAA	SP	NA	PID 0. BT 60
25.5	1040 1/31/95 404031	NA	6	2.5Y 3/2 Very Dark Grayish Brown Poorly Graded Coarse Sand with fine Gravel + and a Trace of Coarse Gravel, wet	SP	NA	PID 0 BT 60
28.0	1040 1/31/95 404031	NA	6	SAA	SP	NA	PID 0 BT 60
28.5	1040 1/31/95 404031	NA	6	SAA	SP	NA	PID 0 BT 60
30.0	1040 1/31/95 404031	NA	6	SAA	SP	NA	PID 0 BT 60
30.5	1040 1/31/95 404031	NA	6	SAA	SP	NA	PID 0 BT 60
31.0	1040 1/31/95 404031	NA	6	SAA	SP	NA	PID 0 BT 60

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	1/31/95	1035
ALPHA	NA	NA	NA
BETA / GAMMA	60	1/31/95	1035

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

CONTROL NO.: 500332-31554-030	FEMP LITHOLOGIC LOG	PAGE 24 OF 54

PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03.32

BORING NUMBER: 31554	COORDINATES: NA	RELATED FAL NO.s: NA

SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE STARTED: 1/27/95
GEOLOGIST: KEN GEIGER	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
81.0 – 81.5	1040 1/31/95 404031	NA	6	SAA	SP	NA	PID 0 BY 60
81.5 – 82.0	1040 1/31/95 404031	NA	6	SAA	SP	NA	PID 0 BY 60 Sizer 200126491
82.0 – 82.5	1040 1/31/95 404032	NA	6	SAA	SP	NA	PID 0 BY 60
82.5 – 83.0	1040 1/31/95 404032	NA	6	SAA	SP	NA	PID 0 BY 60
83.0 – 83.5	1040 1/31/95 404032	NA	6	SAA	SP	NA	PID 0 BY 60
83.5 – 84.0	1040 1/31/95 404032	NA	6	SAA	SP	NA	PID 0 BY 60
84.0 – 84.5	1040 1/31/95 404032	NA	6	SAA	SP	NA	PID 0 BY 60

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 23		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 23		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.:	500332-31554-031
PAGE	25 OF 54
PROJECT NAME:	South Field Pumping Test
PROJECT NO.:	50.03.32
BORING NUMBER:	31554
COORDINATES:	NA
RELATED FAL NO.s:	NA
SURFACE ELEVATION:	NA
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE STARTED:	1/27/95
GEOLOGIST:	Ken Geiger
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE COMPLETED:	2/3/95
WATER USED DURING DRILLING:	533 gal
DRILLING CONTRACTOR:	Alliance
DRILLING EQUIPMENT:	Roto Sonic
DRILLER / HELPER:	Brower / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
84.5	1040 1/31/95 404032	NA	6	SAA	SP	NA	PID 0 BY 60
85.0	1040 1/31/95 404032	NA	6	SAA	SP	NA	PID 0 BY 60
85.5	1040 1/31/95 404032	NA	6	SAA	SP	NA	PID 0 BY 60
86.0	1040 1/31/95 404032	NA	6	2.5Y 3/2 very dark Grayish Brown Poorly Graded fine Sand with some fine Gravel wet	SP	NA	PID 0 BY 60
86.5	1040 1/31/95 404032	NA	6	SAA	SP	NA	PID 0 BY 60 Total 200126494 Silica 200126493
87.0	1235 1/31/95 404033	NA	6	2.5Y 3/2 very dark Grayish Brown Poorly Graded very Coarse Sand with Some fine Gravel wet	SP	NA	PID 0 BY 60
87.5	1235 1/31/95 404033	NA	6	SAA	SP	NA	PID 0 BY 60

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 23		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 23		

NOTES: None

000225

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-032

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554.

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ROTOSONIC

DRILLER / HELPER: Brown / Fontana

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
88.0	1235 1/31/95	NA	6	2.5Y 3/2 Very Dark Grayish Brown poorly Graded Fine Sand with some fine Gravel wet	SP	NA	PID 0. BT 60
88.5	404033						
	1235 1/31/95	NA	6	SAA	SP	NA	PID 0 BT 60
89.0	404033						
	1235 1/31/95	NA	6	SAA	SP	NA	PID 0 BT 60
89.5	404033						
	1235 1/31/95	NA	6	SAA	SP	NA	PID 0 BT 60
90.0	404033						
	1235 1/31/95	NA	6	SAA	SP	NA	PID 0 BT 60
90.5	404033						
	1235 1/31/95	NA	6	SAA	SP	NA	PID 0 BT 60
91.0	404033						
	1235 1/31/95	NA	6	2.5Y 3/2 Very Dark Grayish Brown, well Graded Sand with some fine Gravel wet	SP	NA	PID 0 BT 60
91.5	404033						

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 23		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 23		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-033

PAGE 27 OF 58

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ROTOSONIC

DRILLER / HELPER: BROWER/FOUNTAIN

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
91.5							
92.0	1235 1/31/95 404033	NA	6	SAA	SP	NA	PID 0 BT 60
92.5	1235 1/31/95 404034	NA	6	SAA	SP	NA	PID 0 BT 60
93.0	1235 1/31/95 404034	NA	6	SAA	SP	NA	PID 0 BT 60
93.5	1235 1/31/95 404034	NA	6	SAA	SP	NA	PID 0 BT 60
94.0	1235 1/31/95 404034	NA	6	SAA	SP	NA	PID 0 BT 60
94.5	1235 1/31/95 404034	NA	6	SAA	SP	NA	PID 0 BT 60
95.0	1235 1/31/95 404034	NA	6	SAA	SP	NA	PID 0 BT 60

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 23		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 23		

NOTES: None

000227

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-034

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 30.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
95.0	1235 1/31/95 404034	NA	6	10YR 4/6 Dark Yellowish Brown Poorly Graded Coarse Sand with fine Gravel, wet	SP	NA	PID 0 BY 60 Sieve 200126495
95.5	1235 1/31/95 404034	NA	6	SAA	SP	NA	PID 0 BY 60
96.0	1235 1/31/95 404034	NA	6	2.5Y 3/2 Very Dark Grayish Brown Poorly Graded fine Sand with Some fine Gravel, wet	SP	NA	PID 0 BY 60
96.5	1235 1/31/95 404034	NA	6	SAA	SP	NA	PID 0 BY 60 TOTU 200126496
97.0	1340 1/31/95 404035	NA	6	2.5Y 3/2 Very Dark Grayish Brown Poorly Graded Coarse Sand with a Trace of Fine Gravel wet	SP	NA	PID 0.2 BY 60
97.5	1340 1/31/95 404035	NA	6	SAA	SP	NA	PID 0.2 BY 60
98.0	1340 1/31/95 404035	NA	6	2.5Y 3/2 Very Dark Grayish Brown Poorly Graded Fine Sand wet	SP	NA	PID 0.2 BY 60
99.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See Pg 23		
ALPHA	NA	NA	NA
BETA / GAMMA	See Pg 23		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

000228

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-035

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
98.5							
99.0	1340 1/31/95 404035	NA	6	SAA	SP	NA	PID 0.2 BY 60
99.5	1340 1/31/95 404035	NA	6	2.5Y 3/2 Very Dark Grayish Brown Poorly Graded Medium Sand with some fine Gravel wet	SP	NA	PID 0.2 BY 60
100.0	1340 1/31/95 404035	NA	6	SAA	SP	NA	PID 0.2 BY 60
100.5	1340 1/31/95 404035	NA	6	SAA	SP	NA	PID 0.2 BY 60
101.0	1340 1/31/95 404035	NA	6	SAA	SP	NA	PID 0.2 BY 60
101.5	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60
102.0	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 23		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 23		

NOTES: None

000229

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-036

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554.

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
102.0							
102.5	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60
103.0	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60
103.5	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60
104.0	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60
104.5	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60
105.0	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60
105.5	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60 Sieve 200126498

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg	23	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 23	

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

000230

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-037

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
105.5	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60
106.0	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60
106.5	1340 1/31/95 404036	NA	6	SAA	SP	NA	PID 0.2 BY 60 TOT 200126503
107.0	1510 1/31/95 404037	NA	6	5Y 4/1 Dark Gray well graded sand with some ~~fine~~ EG 1/31/95 fine gravel, wet	SW	NA	PID 0 BY 50 Roll 7
108.0	1510 1/31/95 404037	NA	6	SAA	SW	NA	PID 0 BY 50
108.5	1510 1/31/95 404037	NA	6	SAA	SW	NA	PID 0 BY 50
109.0	1510 1/31/95 404037	NA	6	SAA	SW	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 23		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 23		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-038

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
108.0	1510 1/31/95	NA	6	SAA	SW	NA	PID 0 BY 50
109.5	404037						
110.0	1510 1/31/95 404037	NA	6	SAA	SW	NA	PID 0 BY 50
110.5	1510 1/31/95 404037	NA	6	SAA	SW	NA	PID 0 BY 50
111.0	1510 1/31/95 404037	NA	6	SAA	SW	NA	PID 0 BY 50
111.5	1510 1/31/95 404037	NA	6	SAA	SW	NA	PID 0 BY 50
112.0	1510 1/31/95 404037	NA	6	SAA	SW	NA	PID 0 BY 50
112.5	1015 2/1/95 404039	NA	6	SY 4/1 Dark Gray Poorly Graded Fine Fine Sand w. Tr a Trace of Coarse Sand wet	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 23		
ALPHA	NA	NA	NA
BETA / GAMMA	000232 See pg 23		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-039	PAGE 33 OF 54
PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31554	COORDINATES: NA
RELATED FAL NO.(s): NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA
DATE STARTED: 1/27/95	
GEOLOGIST: REN GEIGER	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA
DATE COMPLETED: 2/3/95	
WATER USED DURING DRILLING: 533 gal	DRILLING CONTRACTOR: Alliance
DRILLING EQUIPMENT: ROTOSONIC	DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
112.5							
113.0	1015 2/1/95 404039	NA	6	5Y 4/1 DARK GRAY Poorly graded fine sand with a trace of coarse sand. wet.	SP	NA	PID 0 BY 50
113.5	1015 2-1-95 404039	NA	6	SAA	SP	NA	PID 0 BY 50
114.0	1015 2-1-95 404039	NA	6	SAA	SP	NA	PID 0 BY 50
114.5	1015 2-1-95 404039	NA	6	SAA	SP	NA	PID 0 BY 50
115.0	1015 2-1-95 404039	NA	6	SAA	SP	NA	PID 0 BY 50
115.5	1020 2-1-95 404040	NA	6	5Y 4/1 DARK GRAY Well graded sand with some fine to coarse gravel wet.	SW	NA	PID 0 BY 50
116.0	1020 2-1-95 404040	NA	6	SAA	SW	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2/1/95	1010
ALPHA	NA	NA	NA
BETA / GAMMA	50	2/1/95	1010

NOTES: NONE

000233

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-040

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 1/24/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
116.0	1020 2-1-95 404040	NA	6	SAA with finer sand.	SW	NA	PID 0. BY 50
116.5	1020 2-1-95 404040	NA	6	SAA	SW	NA	PID 0 BY 50 Sieve 2001 2699 Total 2001 26505
117.0	1020 2-1-95 404040	NA	6	SAA	SW	NA	PID 0 BY 50
117.5	1020 2-1-95 404040	NA	6	SAA	SW	NA	PID 0 BY 50
118.0	1025 2-1-95 404041	NA	6	5Y 4/1 dark gray poorly graded med sand w/ fine to coarse gravel wet with some cobbles.	SP	NA	PID 0 BY 50
118.5	1025 2-1-95 404041	NA	6	SAA	SP	N/A	PID 0 BY 50
119.0	1025 2-1-95 404041	NA	6	SAA	SP	NA	PID 0 BY 50
119.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 33		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 33		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G:/WPSC/94778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-041

PAGE 35 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
119.5							
120.0	1025 2-1-95 404041	NA	6	SAA	Sp	NA	P.D 0 Bg 50
120.5	1025 2-1-95 404041	NA	6	SAA	Sp	NA	P.D 0 Bg 50
121.0	1025 2-1-95 404041	NA	6	SAA	Sp	NA	P.D 0 Bg 50
121.5	1025 2-1-95 404041	NA	6	SAA	Sp	NA	P.D 0 Bg 50
122.0	1025 2-1-95 404041	NA	6	SAA	Sp	NA	P.D 0 Bg 50
122.5	1020 2-1-95 404042	NA	6	SAA	Sp	NA	P.D 0 Bg 50
123.0	1030 2-1-95 404042	NA	6	SAA	Sp	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg. 33		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg. 33		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 508332-31554 — 042

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Foulkner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
123.0							
123.5	1030 2-1-95 404042	NA	6	SAA	SP	NA	P.D 0 Bg 50
124.0	1030 2-1-95 404042	NA	6	SAA	SP	NA	P.D 0 Bg 50
124.5	1030 2-1-95 404042	NA	6	SAA	SP	NA	P.D 0 Bg 50
125.0	1030 2-1-95 404042	NA	6	SAA	SP	NA	P.D 0 Bg 50
125.5	1030 2-1-95 404042	NA	6	SAA	SP	NA	P.D 0 Bg 50
126.5	1030 2-1-95 404042	NA	6	SAA	SP	NA	P.D 0 Bg 50 SIEVE 200/26500
126.5	1030 2-1-95 404042	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg. 33		
ALPHA	NA	NA	NA
BETA / GAMMA	000236 See pg. 33		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-043

PAGE 37 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
126.5	1030 2-1-95 404042	NA	6	SAA	SP	NA	P.D 0 Bg 50 TOTAL/U 2001 2650
127.0	1340 2-1-95 404043	NA	6	5Y 3/2 DARK OLIVE GRAY well graded SAND w/ FINE GRAVEL WET.	SW SP	NA	P.D 0 Bg 50
127.5	1340 2-1-95 404043	NA	6	SAA	SW	NA	P.D 0 Bg 50
128.0	1340 2-1-95 404043	NA	6	SAA	SW	NA	P.D 0 Bg 50
128.5	1340 2-1-95 404043	NA	6	SAA	SW	NA	P.D 0 Bg 50
129.0	1340 2-1-95 404043	NA	6	5Y 3/2 DARK OLIVE GRAY POORLY GRADED SAND w/ SOME FINE GRAVEL TRACE OF COARSE GRAVEL WET	SP	NA	P.D 0 Bg 50
129.5	1340 2-1-95 404043	NA	6	SAA	SP	NA	P.D 0 Bg 50
130.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 33		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 33		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-044

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
130.0							
130.5	1340 2-1-95 404043	NA	6	5Y 3/2 DARK OLIVE GRAY well graded sand w/ some fine to coarse gravel trace of cobbles 3"x2"x1" wet	SW	N/A	P.D 0 Bg 50
131.0	1340 2-1-95 404043	NA	6	SAA	SW	N/A	P.D 0 Bg 50
131.5	1340 2-1-95 404043	NA	6	SAA	SW	N/A	P.D 0 Bg 50
132.0	1340 2-1-95 404043	NA	6	SAA	SW	N/A	P.D 0 Bg 50
132.5	1345 2-1-95 404044	NA	6	SAA	SW	N/A	P.D 0 Bg 50
133.0	1345 2-1-95 404044	NA	6	SAA	SW	N/A	P.D 0 Bg 50
133.5	1345 2-1-95 404044	NA	6	SAA	SW	N/A	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 33		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 33		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-045

PAGE 39 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
133.5							
134.0	1345 2-1-95 404044	NA	6	SAA	SW	NA	PID 0 Bγ 50
134.5	1345 2-1-95 404044	NA	6	SAA	SW	NA	PID 0 Bγ 50
135.0	1345 2-1-95 404044	NA	6	SAA	SW	NA	PID 0 Bγ 50
135.5	1345 2-1-95 404044	NA	6	SAA	SW	NA	PID 0 Bγ 50
136.0	1345 2-1-95 404044	NA	6	SAA	SW	N/A	PID 0 Bγ 50
136.5	1345 2-1-95 404044	NA	6	2.5Y 5/2 grayish brown Poorly ~~sorted~~ graded Fine clayey sand w/ fine to coarse gravel + cobbles 3"x2"x1" wet	SP	N/A	PID 0 Bγ 50
137.0	1345 2-1-95 404044	NA	6	SAA	SP	NA	PID 0 Bγ 50 Sieve - 200126501 Tot U - 200126510

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 33		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 33		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-046

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
137.0	1535 2-1-95 404045	NA	6	2.5Y 4/2 DARK GRAYISH BROWN Poorly graded fine gravel w/ some sand + coarse gravel wet.	SP	NA	P.D 0 Bg 50
137.5	1535 2-1-95 404045	NA	6	SAA	SP	NA	P.D 0 Bg 50
138.0	1535 2-1-95 404045	NA	6	2.5Y 4/2 DARK GRAYISH BROWN well graded sand w/ fine gravel + some coarse. very wet	SW	NA	P.D 0 Bg 50
138.5	1535 2-1-95 404045	NA	6	SAA	SW	NA	P.D 0 Bg 50
139.0	1535 2-1-95 404045	NA	6	SAA	SW	NA	P.D 0 Bg 50
139.5	1535 2-1-95 404045	NA	6	SAA	SW	NA	P.D 0 Bg 50
140.0	1535 2-1-95 404045	NA	6	SAA	SW	NA	P.D 0 Bg 50
140.5	1535 2-1-95 404045	NA	6	SAA	SW	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 33		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 33		

NOTES: None.

000240

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-047

PROJECT NAME: South Field Pump Test

PROJECT NO.: 5003.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
140.5	1535 2-1-95 404045	NA	6	SAA	SW	NA	P.D 0 Bg 50
141.0	1535 2-1-95 404045	NA	6	SAA	SW	NA	P.D 0 Bg 50
141.5	1535 2-1-95 404045	NA	6	SAA	SW	NA	P.D 0 Bg 50
142.0	1540 2-1-95 404046	NA	6	2.5Y 3/2 Very Dark Grayish Brown Poorly graded fine sand wet	SP	NA	P.D 0 Bg 50
142.5	1540 2-1-95 404046	NA	6	SAA	SP	NA	P.D 0 Bg 50
143.0	1540 2-1-95 404046	NA	6	SAA	SP	NA	P.D 0 Bg 50
143.5	1540 2-1-95 404046	NA	6	SAA	SP	NA	P.D 0 Bg 50
144.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 33		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 33		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-048

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
144.0	1540 2-1-95 404046	NA	6	SAA	SP	N/A	P.D 0 Bg 50
144.5	1540 2-1-95 404046	NA	6	SAA	SP	N/A	P.D 0 Bg 50
146.0	1540 2-1-95 404046	NA	6	SAA	SP	N/A	P.D 0 Bg 50
146.5	1540 2-1-95 404046	NA	6	SAA	SP	N/A	P.D 0 Bg 50 SIEVE-200126502
146.0	1540 2-1-95 404046	NA	6	2.5Y 3/2 VERY DARK GRAYISH BROWN poorly graded med sand w/ fine gravel wet	SP	N/A	P.D 0 Bg 50
146.5	1540 2-1-95 404046	NA	6	SAA	SP	N/A	P.D 0 Bg 50 200126512 SIEVE-TOTL
147.0	0810 2-2-95 404047	NA	6	2.5Y 3/2 VERY DARK GRAYISH BROWN poorly graded fine sand w/ trace of fine gravel wet	SP	N/A	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 33		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 33		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-049

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 7/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Blower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
147.5	0810 2-2-95 404047	NA	6	SAA	Sp	NA	P.D 0 Bγ 50
148.0	0810 2-2-95 404047	NA	6	SAA	Sp	NA	P.D 0 Bγ 50
148.5	0810 2-2-95 404047	NA	6	SAA	Sp	NA	P.D 0 Bγ 50
149.0	0810 2-2-95 404047	NA	6	SAA	Sp	NA	P.D 0 Bγ 50
149.5	0810 2-2-95 404047	NA	6	SAA	Sp	NA	P.D 0 Bγ 50
150.0	0810 2-2-95 404047	NA	6	SAA	Sp	NA	P.D 0 Bγ 50
150.5	0810 2-2-95 404047	NA	6	SAA	Sp	NA	P.D 0 Bγ 50
151.0	0810 2-2-95 404047	NA	6	SAA	Sp	NA	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	2/2/95	800
ALPHA	NA	NA	NA
BETA / GAMMA	50	2/2/95	800

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 50 0332- 31554-050

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.0332

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
151.0	0810 2-2-95	NA	6	SAA	SP	NA	PID 0 By 50
152.5	404047						
152.0	0810 2-2-95	NA	6	SAA	SP	NA	PID 0 By 50
	404047						
152.5	0815 2-2-95	NA	6	SAA	SP	NA	PID 0 By 50
	404048						
153.0	0815 2-2-95	NA	6	SAA	SP	NA	PID 0 By 50
	404048						
153.5	0815 2-2-95	NA	6	SAA	SP	NA	PID 0 By 50
	404048						
154.0	0815 2-2-95	NA	6	SAA	SP	NA	PID 0 By 50
	404048						
154.5	0815 2-2-95	NA	6	SAA	SP	NA	PID 0 By 50
	404048						

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G: / WPSC / 94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-051

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.3.2

BORING NUMBER: 31554

COORDINATES:

RELATED FAL NO.(s): NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
154.5							
155.0	0815 2-2-95 404048	NA	6	SAA	SP	NA	PID 0 By 50
155.5	0815 2-2-95 404048	NA	6	SAA	SP	NA	PID 0 By 50
156.0	0815 2-2-95 404048	NA	6	SAA	SP	NA	PID 0 By 50 SIEVE 200126504
156.5	0815 2-2-95 404048	NA	6	SAA	SP	NA	PID 0 By 50
157.0	0815 2-2-95 404048	NA	6	SAA	SP	NA	PID 0 By 50 TOT U 200126514
157.5	1030 2-2-95 404049	NA	6	SAA	SP	NA	PID 0 By 50
158.0	1030 2-2-95 404049	NA	6	SAA	SP	NA	PID 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

000245

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-052

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES:

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
158.0 – 158.5	1030 2-2-95 404049	NA	6	SAA	SP	NA	PID 0 BY 50
158.5 – 159.0	1030 2-2-95 404049	NA	6	SAA	SP	NA	PID 0 BY 50 Roll 8
159.0 – 159.5	1030 2-2-95 404049	NA	6	SAA	SP	NA	PID 0 BY 50
159.5 – 160.0	1030 2-2-95 404049	NA	6	SAA	SP	NA	PID 0 BY 50
160.0 – 160.5	1030 2-2-95 404049	NA	6	SAA	SP	NA	PID 0 BY 50
160.5 – 161.0	1030 2-2-95 404049	NA	6	SAA	SP	NA	PID 0 BY 50
161.0 – 161.5	1030 2-2-95 404049	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-053

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES:

RELATED FAL NO.(s): NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/27/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ROTOSONIC

DRILLER / HELPER: Brown / Fontana

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
162.5	1030 2-2-95	NA	6	SAA	SP	NA	PID 0 BY 50
162.0	404049						
162.5	1035 2-2-95	NA	6	SAA	SP	NA	PID 0 BY 50
	404050						
162.0	1035 2-2-95	NA	6	SAA	SP	NA	PID 0 BY 50
	404050						
163.5	1035 2-2-95	NA	6	2.5Y 3/2 very dark grayish brown poorly graded very fine silty sand w/ trace fine gravel. wet	SP	NA	PID 0 BY 50
	404050						
164.0	1035 2-2-95	NA	6	SAA	SP	NA	PID 0 BY 50
	404050						
164.5	1035 2-2-95	NA	6	2.5Y 3/2 very dark grayish brown poorly graded med. sand w/ some fine gravel. wet	SP	NA	PID 0 BY 50
	404050						
165.0	1035 2-2-95	NA	6	SAA	SP	NA	PID 0 BY 50
	404050						

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg. 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-054

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1/29/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ROTOSONIC

DRILLER / HELPER: Brown / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
165.0	1035 2-2-95 404050	NA	6	2.5 Y 3/2 very dark grayish brown Poorly graded very fine silty sand w/ trace of fine gravel wet	SP	NA	PID 0 Br 50
165.5	1035 2-2-95 404050	NA	6	SAA	SP	NA	PID 0 Br 50
166.0	1035 2-2-95 404050	NA	6	SAA	SP	NA	PID 0 Br 50
166.5	1035 2-2-95 404050	NA	6	SAA	SP	NA	PID 0 Br 50 Sieve 200126506 101/U 200126523
167.0	1415 2-2-95 404051	NA	6	2.5 Y 3/2 very dark grayish brown Poorly graded med sand. wet	SP	NA	PID 0 Br 50
167.5	1415 2-2-95 404051	NA	6	SAA	SP	NA	PID 0 Br 50
168.0	1415 2-2-95 404051	NA	6	SAA	SP	NA	PID 0 Br 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881 000248

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-055	PAGE 49 OF 54
PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31554	COORDINATES: NA
RELATED FAL NO.s: NA	
SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA
DATE STARTED: 1/27/95	
GEOLOGIST: KEN GEIGER	GROUNDWATER LEVEL: NA / DATE: NA / TIME: NA
DATE COMPLETED: 2/3/95	
WATER USED DURING DRILLING: 533 gal	DRILLING CONTRACTOR: Alliance
DRILLING EQUIPMENT: RoTosonic	DRILLER / HELPER: Brown / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
168.5	1415 2-2-95	NA	6	SAA	SP	NA	PID 0. BY 50
169.0	404051						
169.5	1415 2-2-95 404051	NA	6	SAA	SP	NA	PID 0 BY 50
170.0	1415 2-2-95 404051	NA	6	SAA	SP	NA	PID 0 BY 50
170.5	1415 2-2-95 404057	NA	6	SAA	SP	NA	PID 0 BY 50
171.0	1415 2-2-95 404051	NA	6	SAA	SP	NA	PID 0 BY 50
171.5	1415 2-2-95 404051	NA	6	SAA	SP	NA	PID 0 BY 50
172.0	1415 2-2-95 404051	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

CONTROL NO.: 500332-31554-056	FEMP LITHOLOGIC LOG	PAGE 50 OF 54

PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03.32

BORING NUMBER: 31554	COORDINATES: NA	RELATED FAL NO.s: NA

SURFACE ELEVATION: NA	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE STARTED: 1/27/95
GEOLOGIST: KEN GEIGER	GROUNDWATER LEVEL: NA	DATE: NA	TIME: NA	DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
172.0 – 172.5	1420 2-2-95 404052-1	NA	6	SAA	SP	NA	PID 0 BY 50
172.5 – 173.0	1420 2-2-95 404052-1	NA	6	SAA	SP	NA	PID 0 BY 50
173.0 – 173.5	1420 2-2-95 404052-1	NA	6	SAA	SP	NA	PID 0 BY 50
173.5 – 174.0	1420 2-2-95 404052-1	NA	6	SAA	SP	NA	PID 0 BY 50
174.0 – 174.5	1420 2-2-95 404052	NA	6	KG 2/2/95 ~~SAA~~ 2.5Y 3/2 very Dark Grayish Brown poorly Graded Fine Sand W/ SOME MED TO COURSE GRAVEL COBBLE 3"x1"x1" WET	SP	NA	PID 0 BY 50
174.5 – 175.0	1420 2-2-95 404052	NA	6	SAA	SP	NA	PID 0 BY 50
175.0 – 175.5	1420 2-2-95 404052	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 43	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 43	

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681 000250 G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-057

PAGE 51 OF 54

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
175.5 – 176.0	1420 2-2-95 404052	NA	6	SAA	SP	NA	PID 0 BY 50
176.5	1420 2-2-95 404052	NA	6	SAA	SP	NA	PID 0 BY 50
177.0	1420 2-2-95 404052	NA	6	SAA	SP	NA	PID 0 BY 50 SIEVE - 200126502 TOT U - 200126525
177.5	1630 2-2-95 404053	NA	6	2.5Y 3/2 very dark grayish brown poorly grade fine sand w/ trace of fine gravel. wet	SP	NA	PID 0 BY 50
178.0	1630 2-2-95 404053	NA	6	SAA	SP	NA	PID 0 BY 50
178.5	1630 2-2-95 404053	NA	6	SAA	SP	NA	PID 0 BY 50
179.0	1630 2-2-95 404053	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

000251

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-058

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 30.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: RoTosonic

DRILLER / HELPER: Brown / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
179.0 – 179.5	1630 2-2-95 404053	NA	6	SAA	SP	NA	PID 0 BY 50
179.5 – 180.0	1630 2-2-95 404053	NA	6	SAA	SP	NA	PID 0 BY 50
180.0 – 180.5	1630 2-2-95 404053	NA	6	SAA	SP	NA	PID 0 BY 50
180.5 – 181.0	1630 2-2-95 404053	NA	6	SAA	SP	NA	PID 0 BY 50
181.0 – 181.5	1630 2-2-95 404053	NA	6	2.5Y 3/2 VERY DARK GRAYISH BROWN WELL GRADED SAND W/ FINE TO COARSE GRAVEL WET.	SP	NA	PID 0 BY 50
181.5 – 182.0	1630 2-2-95 404053	NA	6	SAA	SP	NA	PID 0 BY 50
182.0 – 182.5	1635 2-2-95 404054	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	BY 43	
ALPHA	NA	NA	NA
BETA / GAMMA	See	BY 43	

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-059

PAGE 53 OF 54

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE STARTED: 1/27/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA

DATE: NA

TIME: NA

DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
182.5 – 183.0	1635 2-2-95 404054	NA	6	SAA	SP	NA	PID 0. BY 50
183.0 – 183.5	1635 2-2-95 404054	NA	6	SAA	SP	NA	PID 0 BY 50
183.5 – 184.0	1635 2-2-95 404054	NA	6	SAA 1" FINE SAND CONTACT W/ BEDROCK	SP	NA	PID 0 BY 50 SIEVE - 200126509 TOTU - 200126527 DUP - 200126515
184.0 – 184.5	1635 2-2-95 404054	NA	6	SHALE ~~SCHNE~~ FG 2/2/95 5Y 4/2 olive gray weathered BEDROCK.	N/A	NA	PID 0 BY 50
184.5 – 185.0	1635 2-2-95 404054	NA	6	2.5Y N4 DARK GREY SHALE BEDROCK	N/A	NA	PID 0 BY 50
185.0 – 185.5	1635 2-2-95 404054	NA	6	SAA	N/A	NA	PID 0 BY 50
185.5 – 186.0	1635 2-2-95 404054	NA	6	SAA	N/A	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31554-060

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31554

COORDINATES: NA

RELATED FAL NO.: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 1-27-95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/3/95

WATER USED DURING DRILLING: 533 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ROTOSONIC

DRILLER / HELPER: Brown / Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
186.0	1635 2-2-95 404054	NA	6	SAA	N/A	N/A	PID 0 BY 50
186.5	1635 2-2-95 404054	NA	6	SAA	N/A	N/A	PID 0 BY 50
187.0	1635 2-2-95 404054	NA	6	SAA BOTTOM OF BORING 1870 FEET	N/A	N/A	PID 0 BY 50
		NA					PID BY
		NA					PID BY
		NA					PID BY
		NA					PID BY

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:	500332-31555-003
PAGE	1 OF 2
PROJECT NAME:	South Field Pumping Test
PROJECT NO.:	50.03.32
BORING NUMBER:	31555
COORDINATES:	NA
RELATED FAL NO.s:	N/A
SURFACE ELEVATION:	NA
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE STARTED:	2/8/95
GEOLOGIST:	Ken Geiger
GROUNDWATER LEVEL:	NA
DATE:	NA
TIME:	NA
DATE COMPLETED:	2/9/95
WATER USED DURING DRILLING:	350 gallons
DRILLING CONTRACTOR:	Alliance
DRILLING EQUIPMENT:	Rotosonic
DRILLER / HELPER:	Brower/Fogartner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
0.0	1325 2-8-95			VERY soft 2.5Y 3/2 VERY DARK grayish Brown Silty clay w/ Roots + MED plasticity.			PID 0 Br 50
0.5	404072	NA	6	Slightly moist	CL	.25	
	1325 2-8-95			SAA			PID 0 Br 50
1.0	404072	NA	6		CL	.25	
	1325 2-8-95			Stiff 10YR 4/4 DARK yellowish Brown w/ some grey mottling MN conc. silty clay w/ TRACE of sand. MED. plas. slightly moist.			PID 0 Br 50
1.5	404072	NA	6		CL	1.5	
	1325 2-8-95			SAA			PID 0 Br 50
2.0	404072	NA	6		CL	1.5	
	1325 2-8-95			SAA			PID 0 Br 50
2.5	404072	NA	6		CL	1.5	
	1325 2-8-95			SAA			PID 0 Br 50
3.0	404072	NA	6		CL	1.5	
	1325 2-8-95			SAA			PID 0 Br 50
3.5	404072	NA	6		CL	1.5	

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	2/8/95	1315
ALPHA	NA	NA	NA
BETA / GAMMA	50	2/8/95	1315

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-004

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: NA

RELATED FAL NO.s: NA

SURFACE ELEVATION: NA

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA | DATE: NA | TIME: NA | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
3.5							
4.0	1325 2-8-95 404072	NA	6	SAA	CL	1.5	PID 0 Bγ 50
4.5	1330 2-8-95 404073	NA	6	SAA	CL	.25 ~~1.5~~	PID 0 Bγ 50
5.0	1330 2-8-95 404073	NA	6	SAA	CL	.25 ~~1.5~~	PID 0 Bγ 50
5.5	1330 2-8-95 404073	NA	6	soft 10 YR 4/6 DARK Yellowish Brown w/ some gray mottling clayey silt. low plas. slightly moist	ML	.25	PID 0 Bγ 50
6.0	1330 2-8-95 404073	NA	6	soft 10 YR 4/4 DARK Yellowish Brown sandy clayey silt low plas. slightly moist	CL	.25	PID 0 Bγ 50
6.5	1330 2-8-95 404073	NA	6	stiff 10 YR 4/6 DARK Yellowish Brown w/ some gray mottling + MN. conc. silty clay w/ trace of sand fine gravel. med plas. slightly moist	CL	.25	PID 0 Bγ 50
7.0	1330 2-8-95 404073	NA	6	SAA w/ COBBLE 3X2X1	CL	2.5	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-005

PAGE 3 OF 22

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.0	1345 2-8-95 404074	NA	6	stiff 5Y ~~2.5Y~~ 4/1 DARK GRAY w/some BROWN MOTTLING SILTY CLAY w/some SAND + FINE GRAVEL MED PLAST. slightly moist (5Y 2/8/95)	CL	1.5	PID 0 Bγ 50
7.5	1345 2-8-95 404074	NA	6	stiff 5Y 4/1 DARK GRAY SILTY CLAY w/ some SAND + FINE GRAVEL MED PLAST. slightly moist	CL	2.0	PID 0 Bγ 50
8.0	1345 2-8-95 404074	NA	6	SAA	CL	2.0	PID 0 Bγ 50
8.5	1345 2-8-95 404074	NA	6	SAA	CL	2.0	PID 0 Bγ 50
9.0	1345 2-8-95 404074	NA	6	SAA	CL	2.0	PID 0 Bγ 50
9.5	1345 2-8-95 404074	NA	6	SAA	CL	2.0	PID 0 Bγ 50
10.0	1345 2-8-95 404074	NA	6	SAA	CL	2.0	PID 0 Bγ 50
10.5	1345 2-8-95 404074	NA	6	very stiff SAA w/ 1" SILT SEAM.	CL	3.0	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

000257

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-006

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555.

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
10.5							
	1345 2-8-95			SAA			PID 0 Bg 50
11.0	404074	NA	6		CL	3.0	
	1345 2-8-95			very silt 5Y 4/1 DARK GRAY Sandy clay low plast. slightly moist.			PID 0 Bg 50
11.5	404074	NA	6		CL	2.25	
	1345 2-8-95			very silty 5Y 4/1 DARK GRAY Silty clay w/ some sand + fine gravel med plast. slightly moist			PID 0 Bg 50
12.0	404074	NA	6		CL	3.25	
	1350 2-8-95			SAA			PID 0 Bg 50
12.5	404075	NA	6		CL	3.25	
	1350 2-8-95			5Y 4/1 DARK GRAY. Very clayey well graded sand w/ some fine gravel. slightly moist			PID 0 Bg 50
13.0	404075	NA	6		SW	N/A	
	1350 2-8-95			very silty 5Y 4/1 DARK GRAY very silty clay w/ trace of fine gravel. low plast. slightly moist.			PID 0 Bg 50
13.5	404075	NA	6		CL	1.0	
	1350 2-8-95			SAA			PID 0 Bg 50
14.0	404075	NA	6		CL	1.0	

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See log		
ALPHA	NA	NA	NA
BETA / GAMMA	See log		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-007

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.(s): N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fouztner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
14.0							
14.5	1350 2-8-95 404075	NA	6	SAA	CL	1.0	PID 0 Bg 50
15.0	1350 2-8-95 404075	NA	6	5Y 4/1 DARK GRAY VERY CLAYEY FINE SAND w/ SOME FINE TO COARSE GRAVEL SLIGHTLY MOIST	SC	N/A	PID 0 Bg 50
15.5	1350 2-8-95 404075	NA	6	SILTY 5Y 4/1 DARK GRAY SILTY CLAY w/ SOME SAND + FINE GRAVEL, MED PLAST. SLIGHTLY MOIST.	CL	1.5	PID 0 Bg 50
16.0	1350 2-8-95 404075	NA	6	SAA	CL	1.5	PID 0 Bg 50
16.5	1350 2-8-95 404075	NA	6	SAA	CL	1.5	PID 0 Bg 50
17.0	1350 2-8-95 404075	NA	6	2.5Y 4/2 DARK GRAYISH BROWN SILTY CLAY w/ SOME SAND + FINE GRAVEL MED PLAST. SLIGHTLY MOIST.	CL	2.0	PID 0 Bg 50
17.5	1420 2-8-95 404076	NA	6	10YR 3/4 DARK BROWN WELL GRADED SAND w/ SOME FINE GRAVEL. DRY	SW	NA	PID 0 SIEVE 20016526 Bg 50 CRUST MATERIAL AT 17'

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 50C332-31555-008

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
17.5							
18.0	1420 2-8-95 404076	NA	6	SAA	SW	NA	PID 0 Bg 50
18.5	1420 2-8-95 404076	NA	6	10YR 3/2 DARK BROWN Poorly graded coarse sand w/ fine gravel DRY	SP	NA	PID 0 Bg 50
19.0	1420 2-8-95 404076	NA	6	SAA	SP	NA	PID 0 Bg 50
19.5	1420 2-8-95 404076	NA	6	SAA	SP	NA	PID 0 Bg 50
20.0	1420 2-8-95 404076	NA	6	SAA	SP	NA	PID 0 Bg 50
20.5	1420 2-8-95 404076	NA	6	SAA	SP	NA	PID 0 Bg 50
21.0	1420 2-8-95 404076	NA	6	SAA	SP	NA	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See log		
ALPHA	NA	NA	NA
BETA / GAMMA	See log		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

000260

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-009

PAGE 7 OF 28

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.0332

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fortner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
21.0	1420 2-8-95 404076	NA	6	10YR 3/2 DARK BROWN poorly graded fine sand w/ fine gravel + some coarse sand. DRY	SP	wl	PID 0. Bg 50
21.5	1420 2-8-95 404076	NA	6	SAA	SP	NA	PID 0 Bg 50
22.0	1425 2-8-95 404077	NA	6	SAA w/ LESS COARSE SAND	SP	NA	PID 0 Bg 50
22.5	1425 2-8-95 404077	NA	6	SAA	SP	NA	PID 0 Bg 50
23.0	1425 2-8-95 404077	NA	6	SAA	SP	NA	PID 0 Bg 50
23.5	1425 2-8-95 404077	NA	6	SAA	SP	NA	PID 0 Bg 50
24.0	1425 2-8-95 404077	NA	6	SAA	SP	NA	PID 0 Bg 50
24.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: none

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3991

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-010

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.5							
25.0	1425 2-8-95 404077	NA	6	SAA	SP	NA	PID 0 Bg 50
25.5	1425 2-8-95 404077	NA	6	SAA	SP	NA	PID 0 Bg 50
26.0	1425 2-8-95 404077	NA	6	SAA	SP	NA	PID 0 Bg 50
26.5	1425 2-8-95 404077	NA	6	SAA	SP	NA	PID 0 Bg 50
27.0	1425 2-8-95 404077	NA	6	SAA	SP	NA	PID 0 Bg 50 SIEVE 20026529
27.5	1505 2-8-95 404078	NA	6	10YR 6/4 DARK YELLOWISH BROWN POORLY GRADED FINE SAND w/ TRACE FINE GRAVEL, DRY	SP	NA	PID 0 Bg 50
28.0	1505 2-8-95 404078	NA	6	SAA	SP	NA	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-778.DRW (11-23-94

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-011

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
28.0							
28.5	1505 2-8-95 404078	NA	6	SAA	SP	NA	PID 0 By 50
29.0	1505 2-8-95 404078	NA	6	SAA	SP	NA	PID 0 By 50
29.5	1505 2-8-95 404078	NA	6	SAA	SP	NA	PID 0 By 50
30.0	1505 2-8-95 404078	NA	6	SAA	SP	NA	PID 0 By 50
30.5	1510 2-8-95 404079	NA	6	SAA	SP	NA	PID 0 By 50
31.0	1510 2-8-95 404079	NA	6	SAA	SP	NA	PID 0 By 50
31.5	1510 2-8-95 404079	NA	6	SAA	SP	NA	PID 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See A91		
ALPHA	NA	NA	NA
BETA / GAMMA	See A91		

NOTES: None

0002653

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-012

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555.

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fouchner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.5							
32.0	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50
32.5	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50
33.0	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50
33.5	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50
34.0	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50
34.5	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50
35.0	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See A91		
ALPHA	NA	NA	NA
BETA / GAMMA	000264 See A91		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-013	PAGE 11 OF 22
PROJECT NAME: South Field Pump Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31555	COORDINATES: N/A
RELATED FAL NO.s: N/A	
SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 2/8/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 2/9/95
WATER USED DURING DRILLING: 350 gal	DRILLING CONTRACTOR: Alliance; DRILLING EQUIPMENT: Rotosonic; DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
35.0							
35.5	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50
36.0	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50
36.5	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50
37.0	1510 2-8-95 404079	NA	6	SAA	SP	NA	P.D 0 Bg 50 Sieve 200265-30
37.5	1530 2-8-95 404080	NA	6	10YR 4/6 DARK yellowish Brown Poorly graded fine sand w/ trace of fine gravel. DRY	SP	NA	P.D 0 Bg 50
38.0	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50
38.5	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See log		
ALPHA	NA	NA	NA
BETA / GAMMA	See log		

NOTES: NCNR

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-014

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
38.5							
39.0	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50
39.5	1530 2-8-95 404080	NA	6	10YR 4/3 DARK BROWN very clayey fine sand poorly graded w/some fine gravel DRY.	SP	NA	P.D 0 Bg 50
40.0	1530 2-8-95 404080	NA	6	10YR 4/4 DARK yellowish BROWN poorly graded fine sand w/some fine gravel DRY.	SP	NA	P.D 0 Bg 50
40.5	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50
41.0	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50
41.5	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50 Roll 11
42.0	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	000266 See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-015

PROJECT NAME: South Field Pump Test

PROJECT NO.: 500332

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
42.0							
42.5	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50
43.0	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50
43.5	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50
44.0	1530 2-8-95 404080	NA	6	SAA	SP	NA	P.D 0 Bg 50
44.5	1535 2-8-95 404081	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.0	1535 2-8-95 404081	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.5	1535 2-8-95 404081	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See jig 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See jig 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-016

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
45.5	1535 2-8-95 404081	NA	6	SAA	SP	NA	P.D 0 Bg 50
46.0	1535 2-8-95 404081	NA	6	SAA	SP	NA	P.D 0 Bg 50
46.5	1535 2-8-95 404081	NA	6	SAA	SP	NA	P.D 0 Bg 50 SIEVE 20012653
47.0	1535 2-8-95 404081	NA	6	10YR 6/3 PALE BROWN CLAYEY SILT w/ SOME SAND + FINE GRAVEL, Dry	ML	NA	P.D 0 Bg 50
47.5	1535 2-8-95 404081	NA	6	SAA	ML	NA	P.D 0 Bg 50
48.0	1535 2-8-95 404081	NA	6	SAA	ML	NA	P.D 0 Bg 50
48.5	1535 2-8-95 404081	NA	6	SAA	ML	NA	P.D 0 Bg 50
49.0	1535 2-8-95 404081	NA	6	SAA	ML	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	000268 See pg 1		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-017

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
49.0	1535 2-8-95 404081	NA	6	SAA	ML	NA	P.D 0 Bg 50
49.5	1535 2-8-95 404081	NA	6	SAA	ML	NA	P.D 0 Bg 50
50.0	1535 2-8-95 404081	NA	6	SAA W/ MORE CEMENTATION	ML	NA	P.D 0 Bg 50
50.5	1535 2-8-95 404081	NA	6	SAA	ML	NA	P.D 0 Bg 50
51.0	1535 2-8-95 404081	NA	6	SAA	ML	NA	P.D 0 Bg 50
51.5	1535 2-8-95 404081	NA	6	SAA	ML	NA	P.D 0 Bg 50
52.0	1540 2-8-95 404082	NA	6	10YR 4/3 Dark Brown Poorly Graded Fine Sand w/ a Trace of Coarse Sand Damp	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	1/1	
ALPHA	NA	NA	NA
BETA / GAMMA	See	1/1	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-018

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
52.5							
53.0	1540 2-8-95 404082	NA	6	SAA	SP	NA	P.D 0 Bg 50
53.5	1540 2-8-95 404082	NA	6	SAA	SP	NA	P.D 0 Bg 50
54.0	1540 2-8-95 404082	NA	6	SAA	SP	NA	P.D 0 Bg 50
54.5	1540 2-8-95 404082	NA	6	SAA	SP	NA	P.D 0 Bg 50
55.0	1540 2-8-95 404082	NA	6	SAA	SP	NA	P.D 0 Bg 50
55.5	1540 2-8-95 404082	NA	6	SAA	SP	NA	P.D 0 Bg 50
56.0	1540 2-8-95 404082	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-019

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
56.0							
56.5	1540 2-8-95 404082	NA	6	10YR 4/3 Dark Brown well Graded sand w/ some fine Gravel, Dry	SW	NA	P.D 0 Bg 50
57.0	1540 2-8-95 404082	NA	6	SAA with more Gravel	SW	NA	P.D 0 Bg 50 Sieve 200126534
57.5	1545 2-8-95 404083	NA	6	10YR 4/4 Dark Yellowish Brown Poorly Graded Medium Sand with Some Fine Gravel WET	SP	NA	P.D 0 Bg 50
58.0	1545 2-8-95 404083	NA	6	SAA	SP	NA	P.D 0 Bg 50
58.5	1545 2-8-95 404083	NA	6	SAA	SP	NA	P.D 0 Bg 50
59.0	1545 2-8-95 404083	NA	6	SAA	SP	NA	P.D 0 Bg 50
59.5	1545 2-8-95 404083	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	AS	
ALPHA	NA	NA	NA
BETA / GAMMA	See	AS	

NOTES: 59.5' - 60.0' Same As 57.0' - & 59.5 404083

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-020

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
60.0							
60.5	1545 2-8-95 404083	NA	6	SAA	SP	NA	P.D 0 By 50
61.0	1545 2-8-95 404083	NA	6	SAA	SP	NA	P.D 0 By 50
61.5	1545 2-8-95 404083	NA	6	SAA	SP	NA	P.D 0 By 50
62.0	1545 2-8-95 404083	NA	6	SAA	SP	NA	P.D 0 By 50
62.5	1550 2-8-95 404084	NA	6	SAA	SP	NA	P.D 0 By 50
63.0	1550 2-8-95 404084	NA	6	SAA	SP	NA	P.D 0 By 50
63.5	1550 2-8-95 404084	NA	6	SAA	SP	NA	P.D 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-021

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.(s): N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
63.5							
64.0	1550 2-8-95 404084	NA	6	SAA	SP	NA	PID 0 Bg 50
64.5	1550 2-8-95 404084	NA	6	SAA	SP	NA	PID 0 Bg 50
65.0	1550 2-8-95 404084	NA	6	SAA	SP	NA	PID 0 Bg 50
65.5	1550 2-8-95 404084	NA	6	SAA	SP	NA	PID 0 Bg 50
66.0	1550 2-8-95 404084	NA	6	SAA	SP	NA	PID 0 Bg 50
66.5	1550 2-8-95 404084	NA	6	10YR 4/3 DARK BROWN WELL GRADED SAND w/ SOME F-WE GRAVEL + TRACE of COARSE GRAVEL. WET	SW	NA	PID 0 Bg 50
67.0	1550 2-8-95 404084	NA	6	SAA	SW	NA	PID 0 Bg 50 Sieve 200/26536

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	A4 /	
ALPHA	NA	NA	NA
BETA / GAMMA	See	A4 /	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-022

PAGE 20 OF 20

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
67.0							
67.5	1555 2-8-95 404085	NA	6	SAA	SW	NA	P.D 0 Bg 50
68.0	1555 2-8-95 404085	NA	6	SAA	SW	NA	P.D 0 Bg 50
68.5	1555 2-8-95 404085	NA	6	10 YR 4/3 DARK BROWN POORLY GRADED MED SAND W/ COURSE SAND FINE GRAVEL. WET.	SP	NA	P.D 0 Bg 50
69.0	1555 2-8-95 404085	NA	6	SAA	SP	NA	P.D 0 Bg 50
69.5	1555 2-8-95 404085	NA	6	SAA	SP	NA	P.D 0 Bg 50
70.0	1555 2-8-95 404085	NA	6	SAA	SP	NA	P.D 0 Bg 50 Sieve 200126538 U 200126529
70.5	1555 2-8-95 404085	NA	6	10 YR 4/3 DARK BROWN POORLY GRADED MED SAND W/ FINE GRAVEL. WET	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

000274

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-023

PAGE 21 OF 28

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
70.5	1555 2-8-95 404085	NA	6	SAA	SP	NA	P.D 0 Bg 50
71.0	1555 2-8-95 404085	NA	6	SAA	SP	NA	P.D 0 Bg 50
71.5	1555 2-8-95 404085	NA	6	SAA	SP	NA	P.D 0 Bg 50
72.0	1600 2-8-95 404086	NA	6	10YR 4/3 DARK BROWN well graded sand w/ fine gravel. WET	SW	NA	P.D 0 Bg 50
72.5	1600 2-8-95 404086	NA	6	SAA	SW	NA	P.D 0 Bg 50
73.0	1600 2-8-95 404086	NA	6	SAA	SW	NA	P.D 0 Bg 50
73.5	1600 2-8-95 404086	NA	6	SAA	SW	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	A91	
ALPHA	NA	NA	NA
BETA / GAMMA	See	A91	

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31555-024

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31555

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/8/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/9/95

WATER USED DURING DRILLING: 350 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Foulkner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
74.0							
	1600 2-8-95			SAA			P.D 0 Bg 50
74.5	404096	NA	6		SW	NA	
	1600 2-8-95			SAA			P.D 0 Bg 50
75.0	404096	NA	6		SW	NA	Seq# 200126540
	1600 2-8-95			SAA			P.D 0 Bg 50
75.5	404096	NA	6		SW	NA	
	1600 2-8-95			SAA			P.D 0 Bg 50
76.0	404096	NA	6		SW	NA	
	1600 2-8-95			SAA W/ MORE + COURSE GRAVEL.	SW		P.D 0 Bg 50
76.5	404096	NA	6			NA	
	1600 2-8-95			SAA	SW		P.D 0 Bg 50
77.0	404096	NA	6	BOTTOM of Boring 77.0 Feet		NA	
							P.D ~~0~~ Bg ~~50~~
77.5		NA					

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	000276 See pg 1		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-010	PAGE 1 OF 54
PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03 32
BORING NUMBER: 31556	COORDINATES: N/A
RELATED FAL NO.: N/A	
SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: N/A DATE: N/A TIME: N/A
DATE STARTED: 2/10/95	
GEOLOGIST: KEN GEIGER	GROUNDWATER LEVEL: N/A DATE: N/A TIME: N/A
DATE COMPLETED: 2/16/95	
WATER USED DURING DRILLING: ~95 gallons	DRILLING CONTRACTOR: Alliance
DRILLING EQUIPMENT: ROTOSONIC	DRILLER / HELPER: BROWER/FOUNTAIN

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
0.0	0915 2-10-95	NA	6	VERY soft 10 YR 3/4 DARK Yellowish Brown SILTY CLAY ROOTS. MED plast. SLIGHTLY moist	CL	.25	PID 0 BY 50
0.5	404088						
1.0	0915 2-10-95 404088	NA	6	VERY soft 10 YR 4/4 DARK Yellowish Brown SILTY CLAY ROOTS. MED plast. Slightly moist.	CL	.25	PID 0 BY 50
1.5	0915 2-10-95 404088	NA	6	SAA	CL	.25	PID 0 BY 50
2.0	0915 2-10-95 404088	NA	6	SAA	CL	.25	PID 0 BY 50
2.5	0915 2-10-95 404088	NA	6	STIFF SAA W/ MN CONC. TRACE OF GRAY Mottling	CL	1.5	PID 0 BY 50
3.0	0915 2-10-95 404088	NA	6	SAA	CL	2.0	PID 0 BY 50
3.5	0915 2-10-95 404088	NA	6	VERY STIFF SAA	CL	2.5	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0.0	2/10/95	830
ALPHA	NA	NA	NA
BETA / GAMMA	50	2/10/95	830

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-011

PAGE 2 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A ~~21~~ D.S 2/3/95

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: NA

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: Dis 3/3/95 ~~N/A~~ 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
3.5	0915 2-10-95 404088	NA	6	SAA	CL	2.5	PID 0 β γ 50
4.0	0920 2-10-95 404089	NA	6	Very stiff 10YR ~~6~~ 4/6 DARK yellowish Brown w/ gray mottling silty clay w/ sand & gravel MN conc. med plast slightly moist	CL	3.5	PID 0 β γ 50
4.5	0920 2-10-95 404089	NA	6	SAA	CL	3.5	PID 0 β γ 50
5.0	0920 2-10-95 404089	NA	6	SAA	CL	3.5	PID 0 β γ 50
5.5	0920 2-10-95 404089	NA	6	SAA w/ more silt	CL	3.5	PID 0 β γ 50
6.0	0920 2-10-95 404089	NA	6	Very stiff 10YR 5/6 yellowish Brown w/ gray mottling. MN conc. silty clay w/ sand & gravel. med plast slightly moist	CL	3.5	PID 0 β γ 50
6.5	0920 2-10-95 404089	NA	6	SAA	CL	3.5	PID 0 β γ 50
7.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

000278

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G:/WPSC/94-778.DRW (11-23-94)

FEMP
LITHOLOGIC LOG

CONTROL NO.: 500332-31556-012

PROJECT NAME: South Field Pump Test

PAGE 3 OF 54

BORING NUMBER: 31556

COORDINATES: N/A

PROJECT NO.: 50.03.32

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A DATE: N/A TIME: N/A

RELATED FAL NO.s: N/A

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A DATE: N/A TIME: N/A

DATE STARTED: 2/10/95

WATER USED DURING DRILLING: 3/3/95 ~~N/A~~ 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DATE COMPLETED: 2/16/95

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.0	0940 2-10-95			Stiff 5Y 4/1 DARK GRAY SILTY CLAY w/ SAND + FINE GRAVEL MED PLAST. Slightly moist			
7.5	404090	NA	6		CL	2.0	PID 0 Bγ 50
	0940 2-10-95			SAA			
8.0	404090	NA	6		CL	2.0	PID 0 Bγ 50
	0940 2-10-95			Very Stiff SAA			
8.5	404090	NA	6		CL	3.0	PID 0 Bγ 50
	0940 2-10-95			SAA			
9.0	404090	NA	6		CL	3.0	PID 0 Bγ 50
	0940 2-10-95			SAA			
9.5	404090	NA	6		CL	3.0	PID 0 Bγ 50
	0940 2-10-95			SAA			
10.0	404090	NA	6		CL	3.0	PID 0 Bγ 50
	0940 2-10-95			SAA			
10.5	404090	NA	6		CL	3.0	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-94)

CONTROL NO.: 500332-31556-013

FEMP

LITHOLOGIC LOG

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fowtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
10.5							
11.0	0940 2-10-95 404090	NA	6	SAA	CL	3.0	PID 0 Bg 50
11.5	0940 2-10-95 404090	NA	6	SAA	CL	3.0	PID 0 Bg 50
12.0	0940 2-10-95 404090	NA	6	SAA	CL	3.0	PID 0 Bg 50
12.5	0945 2-10-95 404091	NA	6	SAA	CL	3.0	PID 0 Bg 50
13.0	0945 2-10-95 404091	NA	6	SAA	CL	3.0	PID 0 Bg 50
13.5	0945 2-10-95 404091	NA	6	SAA	CL	3.0	PID 0 Bg 50
14.0	0945 2-10-95 404091	NA	6	SAA	CL	3.0	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-014	PROJECT NAME: South Field Pump Test
PROJECT NO.: 50.03.32	
BORING NUMBER: 31556	COORDINATES: N/A
RELATED FAL NO.s: N/A	
SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: N/A
DATE: N/A	TIME: N/A
DATE STARTED: 2/10/95	
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: N/A
DATE: N/A	TIME: N/A
DATE COMPLETED: 2/16/95	
WATER USED DURING DRILLING: D.S 3/3/95 ~~N/A~~ 895 gal	DRILLING CONTRACTOR: Alliance
DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fouztner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
14.0							
14.5	0945 2-10-95 404091	NA	6	SAA	CL	3.0	PID 0 Bg 50
15.0	0945 2-10-95 404091	NA	6	SAA	CL	3.0	PID 0 Bg 50
15.5	0945 2-10-95 404091	NA	6	Stiff SAA	CL	1.5	PID 0 Bg 50
16.0	0945 2-10-95 404091	NA	6	SAA	CL	1.5	PID 0 Bg 50
16.5	0945 2-10-95 404091	NA	6	SAA	CL	1.5	PID 0 Bg 50
17.0	0945 2-10-95 404091	NA	6	SAA	CL	1.5	PID 0 Bg 50
17.5	0945 2-10-95 404092	NA	6	SAA	CL	1.5	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-015

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 3/3/95 N/A 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
17.5							
18.0	0955 2-10-95 404092	NA	6	START 10YR 4/6 DARK yellowish BROWN SILTY CLAY w/ SAND - FINE TO COARSE gravel MED PLAST. SLIGHTLY MOIST	CL	1.0	PID 0 Bg 50
18.5	0955 2-10-95 404092	NA	6	SAA	CL	1.0	PID 0 Bg 50
19.0	0955 2-10-95 404092	NA	6	SAA	CL	1.0	PID 0 Bg 50 SIEVE 200126542
19.5	0955 2-10-95 404092	NA	6	10YR 3/4 DARK yellowish BROWN WELL GRADED SAND w/ FINE GRAVEL. DRY	SW	N/A	PID 0 Bg 50
20.0	0955 2-10-95 404092	NA	6	SAA	SW	NA	PID 0 Bg 50 Roll 12
20.5	1000 2-10-95 404093	NA	6	SAA	SW	NA	PID 0 Bg 50
21.0	1000 2-10-95 404093	NA	6	SAA	SW	NA	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See p.		
ALPHA	NA	NA	NA
BETA / GAMMA	See p.		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-016

PAGE 7 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fortner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
21.0							
21.5	1000 2-10-95 404093	NA	6	10YR 3/4 DARK YELLOWISH BROWN POORLY GRADED FINE SAND w/ MED GRAVEL DRY.	SP	NA	PID 0 Bγ 50
22.0	1000 2-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bγ 50
22.5	1000 2-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bγ 50
23.0	1000 2-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bγ 50
23.5	1000 2-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bγ 50
24.0	1000 2-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bγ 50
24.5	1000 2-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-776.DRW (11-23-9-

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-017

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556.

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
24.5							
25.0	1000 7-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bg 50
25.5	1000 7-10-95 404093	NA	6	10YR 6/3 PALE BROWN VERY CLAYEY POORLY GRADED FINE SAND w/ FINE GRAVEL DRY	SP	NA	PID 0 Bg 50
26.0	1000 7-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bg 50
26.5	1000 7-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bg 50
27.0	1000 7-10-95 404093	NA	6	SAA	SP	NA	PID 0 Bg 50
27.5	1020 7-10-95 404094	NA	6	10YR 4/4 DARK YELLOWISH BROWN POORLY GRADED FINE SAND DRY	SP	NA	PID 0 Bg 50 SIEVE 200/265
28.0	1020 7-10-95 404094	NA	6	SAA	SP	NA	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

000284

G:/WPSC/94-776.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.:	500332-31556-018
PAGE	9 OF 54
PROJECT NAME:	South Field Pump Test
PROJECT NO.:	50.03.32
BORING NUMBER:	31559
COORDINATES:	N/A
RELATED FAL NO.:	N/A
SURFACE ELEVATION:	N/A
GROUNDWATER LEVEL:	N/A
DATE:	N/A
TIME:	N/A
DATE STARTED:	2/10/95
GEOLOGIST:	Ken Geiger
GROUNDWATER LEVEL:	N/A
DATE:	N/A
TIME:	N/A
DATE COMPLETED:	2/16/95
WATER USED DURING DRILLING:	895 gal
DRILLING CONTRACTOR:	Alliance
DRILLING EQUIPMENT:	Rotosonic
DRILLER / HELPER:	Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
28.0							
28.5	1020 2-10-95 404094	NA	6	SAA	SP	NA	PID 0 Bg 50
29.0	1020 2-10-95 404094	NA	6	SAA	SP	NA	PID 0 Bg 50
29.5	1020 2/10/95 404094	NA	6	10YR 4/4 DARK yellowish BROWN poorly graded MED SAND w/ some coarse SAND - FINE GRAVEL. DRY	SP	NA	PID 0 Bg 50
30.0	1020 2/10/95 404094	NA	6	SAA	SP	NA	PID 0 Bg 50
30.5	1020 2/10/95 404094	NA	6	10YR 4/4 DARK yellowish BROWN poorly graded FINE SAND. DRY	SP	NA	PID 0 Bg 50
31.0	1020 2/10/95 404094	NA	6	SAA	SP	NA	PID 0 Bg 50
31.5	1020 2/10/95 404094	NA	6	SAA	SP	NA	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-019

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
31.5							
32.0	1020 2-10-95 404094	NA	6	SAA	SP	NA	P.D 0 Bg 50
32.5	1025 2-10-95 404095	NA	6	SAA	SP	NA	P.D 0 Bg 50
33.0	1025 2-10-95 404095	NA	6	SAA	SP	NA	P.D 0 Bg 50
33.5	1025 2-10-95 404095	NA	6	SAA	SP	NA	P.D 0 Bg 50
34.0	1025 2-10-95 404095	NA	6	SAA	SP	NA	P.D 0 Bg 50
34.5	1025 2-10-95 404095	NA	6	SAA	SP	NA	P.D 0 Bg 50
35.0	1025 2-10-95 404095	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	000286 See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-020

PAGE 11 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
35.0							
35.5	1025 2-10-95 404095	NA	6	SAA	SP	VA	PiDO Bγ50
36.0	1025 2-10-95 404095	NA	6	SAA	SP	VA	PiDO Bγ50
36.5	1025 2-10-95 404095	NA	6	SAA	SP	VA	PiDO Bγ50
37.0	1025 2-10-95 404095	NA	6	SAA	SP	VA	PiDO Bγ50 SIEVE 2001265-48
37.5	1030 2-10-95 404096	NA	6	SAA	SP	VA	PiDO Bγ50
38.0	1030 2-10-95 404096	NA	6	SAA	SP	VA	PiDO Bγ50
38.5	1030 2-10-95 404096	NA	6	SAA	SP	VA	PiDO Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

000287

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556——021

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
38.5							
39.0	1030 2-10-95 404096	NA	6	SAA	SP	NA	PiDO Bg50
39.5	1030 2-10-95 404096	NA	6	2.5Y 4/2 DARK GRAYISH BROWN POORLY GRADED FINE SAND w/ FINE TO COARSE GRAVEL. DRY	SP	NA	PiDO Bg50
40.0	1030 2-10-95 404096	NA	6	SAA	SP	NA	PiDO Bg50
40.5	1030 2-10-95 404096	NA	6	SAA	SP	NA	PiDO Bg50
41.0	1030 2-10-95 404096	NA	6	SAA	SP	NA	PiDO Bg50
41.5	1030 2-10-95 404096	NA	6	SAA	SP	NA	PiDO Bg50
42.0	1030 2-10-95 404096	NA	6	SAA	SP	NA	PiDO Bg50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	000288 see pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-022

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
42.0							
42.5	1030 2-10-95 404096	NA	6	SAA	SP	NA	P.D 0 Bg 50
43.0	1030 2-10-95 404096	NA	6	SAA	SP	NA	P.D 0 Bg 50
43.5	1030 2-10-95 404096	NA	6	10 YR 6/3 PALE BROWN. VERY CLAYEY POORLY GRADED FINE SAND W/ COARSE SAND. SOME CEMENTATION OF MATERIAL. DRY	SP	NA	P.D 0 Bg 50
44.0	1030 2-10-95 404096	NA	6	SAA	SP	NA	P.D 0 Bg 50
44.5	1035 2-10-95 404097	NA	6	10YR 4/6 DARK YELLOWISH BROWN POORLY GRADED FINE SAND W/ SOME FINE GRAVEL DRY.	SP	NA	P.D 0 Bg 50
45.0	1035 2-10-95 404097	NA	6	SAA	SP	NA	P.D 0 Bg 50
45.5	1035 2-10-95 404097	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-023

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Foulkner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
45.5							
46.0	1035 2-10-95 404097	NA	6	SAA	SP	NA	P.D 0 Bg 50
46.5	1035 2-10-95 404097	NA	6	SAA	SP	NA	P.D 0 Bg 50
47.0	1035 2-10-95 404097	NA	6	SAA	SP	NA	P.D 0 Bg 50 SIEVE 2001 26 49
47.5	1045 2-10-95 404098	NA	6	10YR 4/3 DARK BROWN well graded SAND WITH FINE GRAVEL. DRY	SW	NA	P.D 0 Bg 50
48.0	1045 2-10-95 404098	NA	6	SAA	SW	NA	P.D 0 Bg 50
48.5	1045 2-10-95 404098	NA	6	SAA	SW	NA	P.D 0 Bg 50
49.0	1045 2-10-95 404098	NA	6	SAA	SW	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-024

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
49.0	1045 2-10-95 404098	NA	6	SAA	SW	NA	P.D 0 Bg 50
49.5	1045 2-10-95 404098	NA	6	SAA	SW	NA	P.D 0 Bg 50
50.0	1045 2-10-95 404098	NA	6	SAA w/ MORE COARSE GRAVEL.	SW	NA	P.D 0 Bg 50
50.5	1045 2-10-95 404098	NA	6	SAA. 49.5-50.0	SW	NA	P.D 0 Bg 50
51.0	1045 2-10-95 404098	NA	6	SAA	SW	NA	P.D 0 Bg 50
51.5	1045 2-10-95 404098	NA	6	10YR 3/4 DARK yellowish BROWN POORLY GRADED FINE SAND w/ COARSE SAND + FINE GRAVEL. DAMP	SP	NA	P.D 0 Bg 50
52.0	1100 2-10-95 404099	NA	6	10YR 3/4 DARK yellowish BROWN WELL GRADED SAND w/ FINE GRAVEL. DAMP.	SW	NA	P.D 0 Bg 50
52.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See Pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	See Pg 1		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-025

PROJECT NAME: South Field Pump Test

PROJECT NO.: 60.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/6/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
52.5							
53.0	1100 2-10-95 404099	NA	6	SAA	SW	N/A	P.D 0 Bg 50
53.5	1100 2-10-95 404099	NA	6	10 YR 3/4 DARK yellowish BROWN poorly graded med sand w/ fine gravel damp	SP	N/A	P.D 0 Bg 50
54.0	1100 2-10-95 404099	NA	6	SAA	SP	N/A	P.D 0 Bg 50
54.5	1100 2-10-95 404099	NA	6	SAA	SP	N/A	P.D 0 Bg 50
55.0	1100 2-10-95 404099	NA	6	SAA	SP	N/A	P.D 0 Bg 50
55.5	1100 2-10-95 404099	NA	6	SAA	SP	NA	P.D 0 Bg 50
56.0	1100 2-10-95 404099	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 1		
ALPHA	NA	NA	NA
BETA / GAMMA	000292 See pg 1		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-026

PAGE 17 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 84 Sgal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
56.0	1100 2-10-95 404099	NA	6	SAA	SP	NA	P.D 0 Bγ 50
56.5	1100 2-10-95 404099	NA	6	SAA	SP	NA	P.D 0 Bγ 50 SIEVE 200 26530
57.0	0915 2-1[illegible]-95 404100	NA	6	10YR 3/2 very dark grayish brown well graded sand w/ fine gravel wet	SW	N/A	P.D 0 Bγ 50
57.5	0915 2-13[illegible] 404100	NA	6	SAA	SW	N/A	P.D 0 Bγ 50
58.0	0915 2-1[illegible]-95 404100	NA	6	SAA	SW	N/A	P.D Bγ
58.5	0915 2-13-95 404100	NA	2" 4"	10YR 5/4 yellowish brown [illegible] gravel w/ some coarse sand wet 10YR 3/2 very dark grayish brown well graded sand w/ fine gravel wet	GP SW	N/A	P.D Bγ
59.0	0915 [illegible] 404100	NA	[illegible]	10YR 4/4 dark yellowish brown [illegible] gravel wet	[illegible]	N/A	P.D Bγ
59.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg		

NOTES: 59.5-60.0 Feet
Same As 59.0-59.5

000293

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-027

PAGE 18 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
60.0							
60.5	0915 2-13-95 404100	NA	6	SAA	SP	NA	P.D 0 Bγ 50
61.0	0920 2-13-95 404101	NA	6	SAA	SP	NA	P.D 0 Bγ 50
61.5	0920 [illegible] 404101	NA	6	SAA	SP	NA	P.D 0 Bγ 50
62.0	0920 2-13-95 404101	NA	6	SAA	SP	NA	P.D 0 Bγ 50
62.5	0920 2-13-95 404101	NA	6	SAA	SP	NA	P.D 0 Bγ 50
63.0	0920 2-13-95 404101	NA	6	SAA	SP	NA	P.D 0 Bγ 50
63.5	0920 [illegible]	NA	6	10YR 3/3 DARK BROWN [illegible] COARSE [illegible]	SW	NA	P.D Bγ

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2-13-95	0915
ALPHA	NA	NA	NA
BETA / GAMMA	50	2-13-95	0915

NOTES: NONE

000294

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-028

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
63.5							
64.0	0920 2.13.95 404101	NA	6	SAA	SW	N/A	P.D 0 Bg.5
64.5	0920 2.13.95 404101	NA	6	SAA	SW	N/A	P.D 0 Bg.50
65.0	0920 2.13.95 404101	NA	6	SAA	SW	N/A	P.D 0 Bg.50
65.5	0920 2.13.95 404101	NA	6	10YR 3/3 DARK BROWN POORLY GRADED MED SAND w/ TRACE FINE GRAVEL WET	SP	N/A	P.D 0 Bg.50
66.0	0920 2.13.95 404101	NA	6	SAA	SP	N/A	P.D 0 Bg.50
66.5	0920 2.13.95 404101	NA	6	SAA	SP	N/A	P.D 0 Bg.50
67.0	0920 2.13.95 404101	NA	6	SAA	SP	N/A	P.D 0 Bg.50 S.E.0 - 20 TOT 0 - 30

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See p.g. 15		
ALPHA	NA	NA	NA
BETA / GAMMA	See p.g. 8		

NOTES: None

CONTROL NO.: 500332-31556-029	FEMP LITHOLOGIC LOG	PAGE 20 OF 54

PROJECT NAME: South Field Pump Test		PROJECT NO.: 50.03.32
BORING NUMBER: 31556	COORDINATES: N/A	RELATED FAL NO.s: N/A

SURFACE ELEVATION:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE STARTED:
N/A	N/A	N/A	N/A	2/10/95

GEOLOGIST:	GROUNDWATER LEVEL:	DATE:	TIME:	DATE COMPLETED:
Ken Geiger	N/A	N/A	N/A	2/16/95

WATER USED DURING DRILLING:	DRILLING CONTRACTOR:	DRILLING EQUIPMENT:	DRILLER / HELPER:
895 gal	Alliance	Rotosonic	Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
67.0	1120 2-13-95 404102	NA	6	10YR 3/4 DARK YELLOWISH BROWN POORLY GRADED ~~FINE~~ ~~MED~~ MED. SAND w/ FINE GRAVEL WET	SP	NA	PID 0 Bg 50
67.5	1120 2-13-95 404102	NA	6	SAA	SP	NA	PID 0 Bg 50
68.0	1120 2-13-95 404102	NA	6	SAA	SP	NA	PID 0 Bg 50
68.5	1120 2-13-95 404102	NA	6	SAA	SP	NA	PID 0 Bg 50
69.0	1120 2-13-95 404102	NA	6	SAA	SP	NA	PID 0 Bg 50
69.5	1120 2-13-95 404102	NA	6	SAA	SP	NA	PID 0 Bg 50
70.0	1120 2-13-95 404102	NA	6	SAA	SP	NA	PID 0 Bg 50
70.5	1120 2-13-95 404102	NA	6	SAA	SP	NA	PID 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	000296 See pg 18		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.:	500332-31556-030
PAGE	21 OF 54
PROJECT NAME:	South Field Pump Test
PROJECT NO.:	50.03.32
BORING NUMBER:	31556
COORDINATES:	N/A
RELATED FAL NO.s:	N/A
SURFACE ELEVATION:	N/A
GROUNDWATER LEVEL:	N/A
DATE:	N/A
TIME:	N/A
DATE STARTED:	2/10/95
GEOLOGIST:	Ken Geiger
GROUNDWATER LEVEL:	N/A
DATE:	N/A
TIME:	N/A
DATE COMPLETED:	2/16/95
WATER USED DURING DRILLING:	895 gal
DRILLING CONTRACTOR:	Alliance
DRILLING EQUIPMENT:	Rotosonic
DRILLER / HELPER:	Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
70.5	1120 2-13-95 404102	NA	6	SAA	SP	NA	P.D 0 Bγ 50
71.0	1120 2-13-95 404102	NA	6	10 YR 3/4 DARK YELLOWISH BROWN POORLY GRADED COURSE SAND WET	SP	NA	P.D 0 Bγ 50
71.5	1120 2-13-95 404102	NA	6	SAA	SP	NA	P.D 0 Bγ 50
72.0	1125 2-13-95 404103	NA	6	10 YR 3/4 DARK YELLOWISH BROWN POORLY GRADED MED SAND FINE GRAVEL WET	SP	NA	P.D 0 Bγ 50 TOTU-200126560 SEUR200126556
72.5	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bγ 50
73.0	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bγ 50
73.5	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bγ 50
74.0	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 17	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 17	

NOTES: None

000297

CONTROL NO.: 500332-31556-031	FEMP LITHOLOGIC LOG	PAGE 22 OF 54

PROJECT NAME: South Field Pump Test		PROJECT NO.: 50.07.32
BORING NUMBER: 31556	COORDINATES: N/A	RELATED FAL NO.s: N/A

SURFACE ELEVATION: NA	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 2/10/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
74.0	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bg 50
74.5	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bg 50
75.0	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bg 50
75.5	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bg 50
76.0	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bg 50
76.5	1125 2-13-95 404103	NA	6	10YR 3/4 DARK YELLOWISH BROWN POORLY GRADED FINE SAND W/ COARSE SAND + FINE TO COARSE GRAVEL WET	SP	NA	P.D 0 Bg [illegible]
77.0	1125 2-13-95 404103	NA	6	SAA	SP	NA	P.D 0 Bg 50 SIEVE - 200126552 TOT - 200126537
77.5	1315 2-13-95 404104	NA	6	10YR 3/2 VERY DARK GRAYISH BROWN [illegible] SAND W/ FINE GRAVEL WET	SW	NA	P.D 0 Bg [illegible]

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

000298

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-032

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
77.5							
78.0	1315 2-12-95 404164	NA	6	SAA	SW	NA	P.D 0 Bg 50
78.5	1315 2-13-95 404164	NA	6	SAA	SW	NA	P.D 0 Bg 50
79.0	1315 2-13-95 404164	NA	6	SAA w/ COBBLE 4"x2"x1/2"	SW	NA	P.D 0 Bg 50
79.5	1315 2-13-95 404164	NA	6	SAA	SW	NA	P.D 0 Bg 50
80.0	1315 2-13-95 404164	NA	6	SAA	SW	NA	P.D 0 Bg 50
80.5	1315 2-13-95 404164	NA	6	SAA	SW	NA	P.D 0 Bg 50
81.0	1315 2-13-95 404164	NA		SAA	SW	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: none

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-033

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.07.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
81.0							
81.5	1315 2-13-95 404104	NA	6	SAA	SW	NA	P.D 0 Bg 50
82.0	1315 2-13-95 404104	NA	6	SAA	SW	NA	P.D 0 Bg 50
82.5	1320 2-13-95 404105	NA	6	SAA	SW	NA	P.D 0 Bg 50
83.0	1320 2-13-95 404105	NA	6	SAA	SW	NA	P.D 0 Bg 50
83.5	1320 2-13-95 404105	NA	6	SAA	SW	NA	P.D 0 Bg 50
84.0	1320 2-13-95 404105	NA	6	SAA	SW	NA	P.D 0 Bg 50
84.5	1320 2-13-95 404105	NA	6	SAA	SW	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	300 See pg 18		

NOTES: name

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-034

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
84.5							
85.0	1320 2-13-95 404105	NA	6	SAA	SW	NA	P.D 0 Bg 50
85.5	1320 2-13-95 404105	NA	6	10YR 3/2 VERY DARK GRAYISH BROWN POORLY GRADED MED SAND W/ SOME FINE GRAVEL. WET	SW	NA	P.D 0 Bg 50
86.0	1320 2-13-95 404105	NA	6	SAA	SW	NA	P.D 0 Bg 50
86.5	1320 2-13-95 404105	NA	6	SAA W/ COBBLE 5"x2"x1"	SW	NA	P.D 0 Bg 50
87.0	1320 2-13-95 404105	NA	6	SAA	SW	NA	P.D 0 Bg 50 SIEVE-200126534 TOTU-200126539
87.5	1500 2-13-95 404106	NA	6	10YR 3/4 DARK YELLOWISH BROWN POORLY GRADED MED SAND W/SOME COARSE SAND. SOME FINE TO COARSE GRAVEL. WET	SP	NA	P.D 0 Bg 50
88.0	1500 2-13-95 404106	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-035

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: NA | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: NA | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
88.0							
88.5	1500 2-13-95 404106	NA	6	SAA	SP	NA	P.D 0 Bg 50
89.0	1500 2-13-95 404106	NA	6	SAA	SP	NA	P.D 0 Bg 50
89.5	1500 2-13-95 404106	NA	6	SAA	SP	NA	P.D 0 Bg 50
90.0	1500 2-13-95 404106	NA	6	SAA	SP	NA	P.D 0 Bg 50
90.5	1500 2-13-95 404106	NA	6	SAA	SP	NA	P.D 0 Bg 50
91.0	1500 2-13-95 404106	NA	6	SAA	SP	NA	P.D 0 Bg 50
91.5	1500 2-13-95 404106	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-036	PAGE 27 OF 54
PROJECT NAME: South Field Pump Test	PROJECT NO.: 50.03.32
BORING NUMBER: 31556	COORDINATES: N/A
RELATED FAL NO.s: N/A	
SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE STARTED: 2/10/95
GEOLOGIST: Ken Geiger	GROUNDWATER LEVEL: N/A; DATE: N/A; TIME: N/A; DATE COMPLETED: 2/16/95
WATER USED DURING DRILLING: 895 gal	DRILLING CONTRACTOR: Alliance; DRILLING EQUIPMENT: Rotosonic; DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
91.5							
92.0	1500 2-17-95 404106	NA	6	SAA	SP	NA	P.D 0 Bg 50
92.5	1505 2-13-95 404107	NA	6	SAA	SP	NA	P.D 0 Bg 50
93.0	1505 2-17-95 404107	NA	6	SAA	SP	NA	P.D 0 Bg 50
93.5	1505 2-13-95 404107	NA	6	SAA	SP	NA	P.D 0 Bg 50
94.0	1505 2-13-95 404107	NA	6	SAA	SP	NA	P.D 0 Bg 50
94.5	1505 2-13-95 404107	NA	6	SAA W/LESS COARSE SAND	SP	NA	P.D 0 Bg 50
95.0	1505 2-13-95 404107	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	Sep 1918		
ALPHA	NA	NA	NA
BETA / GAMMA	Sep 1918		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-037

PROJECT NAME: South Field Pump Test

PROJECT NO.: 30332

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
95.0							
95.5	1505 2-13-95 404107	NA	6	SAA	SP	NA	P.D 0 Bg 50
96.0	1505 2-13-95 404107	NA	6	SAA	SP	NA	P.D 0 Bg 50
96.5	1505 2-13-95 404107	NA	6	SAA 93.5-94.0	SP	NA	P.D 0 Bg 50
97.0	1505 2-13-95 404107	NA	6	SAA	SP	NA	P.D 0 Bg 50 S.EVE-200126557 TOTU-200126541
97.5	1700 2-13-95 404108	NA	6	10 YR 3/2 very dark grayish brown well graded sand w/ some fine gravel. wet	SW	NA	P.D 0 Bg 50
98.0	1700 2-13-95 404108	NA	6	SAA	SW	NA	P.D 0 Bg 50
98.5	1700 2-13-95 404108	NA	6	SAA	SW	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-038

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Lotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
98.5	1700 2-13-95 404108	NA	6	SAA	SP	NA	P.D 0 By 50
99.0	1700 2-13-95 404108	NA	6	SAA	SP	NA	P.D 0 By 50
99.5	1700 2-13-95 404108	NA	6	SAA	SP	NA	P.D 0 By 50
100.0	1700 2-13-95 404108	NA	6	SAA	SP	NA	P.D 0 By 50
100.5	1700 2-13-95 404108	NA	6	SAA	SP	NA	P.D 0 By 50
101.0	1700 2-13-95 404108	NA	6	SAA	SP	NA	P.D 0 By 50
101.5	1700 2-13-95 404108	NA	6	SAA	SP	NA	P.D 0 By 50
102.0	1700 2-13-95 404108	NA	6	SAA	SP	NA	P.D 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See 1918		
ALPHA	NA	NA	NA
BETA / GAMMA	See 1918		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 50 0332-31556-039

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
102.0	1700 2-13-95 404108	NA	6	10 YR 3/2 VERY DARK GRAYISH BROWN Poorly graded coarse sand w/ fine sand trace fine gravel. wet	SP	NA	P.D 0 Bg 50
102.5	1700 2-13-95 404108	NA	6	SAA	SP	NA	P.D 0 Bg 50
103.0	1700 2-13-95 404109	NA	6	10 YR 3/2 very dark grayish brown Poorly graded med sand w/some fine gravel. wet	SP	NA	P.D - Bg 50
103.5	1700 2-13-95 404109	NA	6	SAA	SP	NA	P.D 0 Bg 50
104.0	1700 2-13-95 404109	NA	6	SAA	SP	NA	P.D 0 Bg 50
104.5	1700 2-13-95 404109	NA	6	SAA	SP	NA	P.D 0 Bg 50
105.0	1700 2-13-95 404109	NA	4	5Y 3/1 very dark gray. poorly graded fine sand. wet.	SP	NA	P.D 0 Bg 50
105.5			2	5Y 3/1 very dark gray well graded w/some fine gravel wet	SW		

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-040

PAGE 31 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: NA

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
105.5	1700 2-13-95 404109	NA	6	SAA	SW	NA	PiDo Bγ50
106.0	1700 2-13-95 404109	NA	6	SAA	SW	NA	PiDo Bγ50
106.5	1700 2-13-95 404109	NA	6	SAA	SW	NA	PiDo Bγ50 S.EVE-200126559 TOTIO 200126543
107.0	0830 2-14-95 404110	NA	6	5Y 311 VERY DARK GRAY POORLY GRADED MED SAND w/ COARSE SAND + FINE GRAVEL WET	SP	NA	PiDo Bγ50
107.5	0830 2-14-95 404110	NA	6	SAA	SP	NA	PiDo Bγ50
108.0	0830 2-14-95 404110	NA	6	SAA	SP	NA	PiDo Bγ50
108.5	0830 2-14-95 404110	NA	6	SAA	SP	NA	PiDo Bγ50
109.0	0830 2-14-95 404110	NA	6	SAA	SP	NA	PiDo Bγ50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 18		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 18		

NOTES: None

000307

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-041

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Lotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
109.0	0830 2-14-95 404110	NA	6	SAA	SP	NA	P.D 0 Bg 50
109.5	0830 2-14-95 404110	NA	6	SAA	SP	NA	P.D 0 Bg 50
110.0	0830 2-14-95 404110	NA	6	5Y 3/1 very dark gray. poorly graded coarse sand w/some med to fine sand. Some fine to coarse gravel. wet	SP	NA	P.D 0 Bg 50
110.5	0830 2-14-95 404110	NA	6	SAA	SP	NA	P.D 0 Bg 50
111.0	0830 2-14-95 404110	NA	6	SAA	SP	NA	P.D 0 Bg 50
111.5	0830 2-14-95 404110	NA	6	SAA	SP	NA	P.D 0 Bg 50
112.0	0830 2-14-95 404110	NA	6	SAA	SP	NA	P.D 0 Bg 50
112.5	0830 2-14-95 404110	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2/14/95 ~~0830~~ KO 2/14/95	0830
ALPHA	NA	NA	NA
BETA / GAMMA	000308	2/14/95 ~~0830~~ KO 2/14/95	0830

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-042

PAGE 33 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: NA

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
112.5							
	930 2-14-95 404110	NA	6	SAA	SP	NA	P.D.O Bg 50
113.0							
	835 2-14-95 404111	NA	6	SAA	SP	NA	P.D.O Bg 50
113.5							
	0835 2-14-95 404111	NA	6	SAA	SP	NA	P.D.O Bg 50
114.0							
	0835 2-14-95 404111	NA	6	5Y 3/1 very DARK GREY. POORLY GRADED FINE SAND w/some COARSE SAND FINE GRAVEL TRACE COARSE GRAVEL. wet	SP	NA	P.D.O Bg 50
114.5							
	0835 2-14-95 404111	NA	6	SAA	SP	NA	P.D.O Bg 50
115.0							
	0835 2-14-95 404111	NA	6	SAA	SP	NA	P.D.O Bg 50
115.5							
	0835 2-14-95 404111	NA	6	SAA	SP	NA	P.D.O Bg 50
116.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 32		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 32		

NOTES: NONE

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-043

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourliner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
116.0							
116.5	0830 2-14-95 404111	NA	6	SAA	SP	NA	P.D 0 Bg 50
117.0	0835 2-14-95 404111	NA	6	SAA	SP	NA	P.D 0 Bg 50 Sieve - 20012 6561 Total - 20026545
117.5	1115 2-14-95 404112	NA	6	5Y 3/2 DARK OLIVE GRAY. POORLY GRADED COARSE SAND W/TRACE FINE GRAVEL. WET	SP	NA	P.D 0 Bg 50
118.0	1115 2-14-95 404112	NA	6	SAA	SP	NA	P.D 0 Bg 50
118.5	1115 2-14-95 404112	NA	6	SAA	SP	NA	P.D 0 Bg 50
119.0	1115 2-14-95 404112	NA	6	SAA	SP	NA	P.D 0 Bg 50
119.5	1115 2-14-95 404112	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 32	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 32	

NOTES: NONE

000310

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-044

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
119.5							
	1115 2-14-95 404112	NA	6	SAA	SP	NA	P.D 0 Bg 50
120.0							
	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 Bg 50
120.5							
	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 Bg 50
121.0							
	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 Bg 50
121.5							
	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 Bg 50
122.0							
	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 Bg 50
122.5							
	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 Bg 50
123.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 32		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 32		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-045

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Blower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
123.0	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 By 50
123.5	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 By 50
124.0	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 By 50
124.5	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 By 50
125.0	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 By 50
125.5	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 By 50
126.0	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 By 50
126.5	1120 2-14-95 404113	NA	6	SAA	SP	NA	P.D 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 32		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 32		

NOTES: NONE

00312

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-046

PAGE 37 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
126.5	1120 2-14-95 404113	NA	6	SAA	SP	NA	PiD 0 Bγ 50 Sieve - 2001265 63 NG 2-14-95 Toto - 2001265 53 NG 2-14-95
127.0	1345 2-14-95 404114	NA	6	5Y 3/2 DARK olive gray. Poorly graded Coarse sand w/some fine gravel. wet.	SP	NA	PiD 0 Bγ 50
127.5	1345 2-14-95 404114	NA	6	SAA	SP	NA	PiD 0 Bγ 50
128.0	1345 2-14-95 404114	NA	6	5Y 3/2 DARK olive gray poorly graded Fine sand w/some fine gravel. wet	SP	NA	PiD 0 Bγ 50
128.5	1345 2-14-95 404114	NA	6	SAA	SP	NA	PiD 0 Bγ 50
129.0	1345 2-14-95 404114	NA	6	SAA	SP	NA	PiD 0 Bγ 50
129.5	1345 2-14-95 404114	NA	6	SAA	SP	NA	PiD 0 Bγ 50
130.0	1345 2-14-95 404114	NA	6	SAA	SP	NA	PiD 0 Bγ 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 32	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 32	

NOTES: None

000313

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-047

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brewer/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
130.0							
130.5	1345 2-14-95 404114	NA	6	SAA	SP	NA	P.D.O Bg 50
131.0	1345 2-14-95 404114	NA	6	SAA	SP	NA	P.D.O Bg 50
131.5	1345 2-14-95 404114	NA	6	5Y 3/2 DARK OLIVE GRAY. poorly graded coarse sand w/ fine gravel. wet	SP	NA	P.D.O Bg 50
132.0	1345 2-14-95 404114	NA	6	SAA	SP	NA	P.D.O Bg 50
132.5	1350 2-14-95 404115	NA	6	5Y 3/2 DARK OLIVE GRAY well graded sand w/ fine to coarse gravel. wet.	SW	NA	P.D.O Bg 50
133.0	1350 2-14-95 404115	NA	6	SAA	SW	NA	P.D.O Bg 50
133.5	1350 2-14-95 404115	NA	6	SAA	SW	NA	P.D.O Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	Ag 32	
ALPHA	NA	NA	NA
BETA / GAMMA	000314 See	Ag 32	

NOTES: none

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556——048

PAGE 39 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
133.5							
134.0	1350 2-14-95 404115	NA	6	SAA	SW	NA	PiD 0 Bγ 50
134.5	1350 2-14-95 404115	NA	6	SAA	SW	NA	PiD 0 Bγ 50
135.0	1350 2-14-95 404115	NA	6	SAA	SW	NA	PiD 0 Bγ 50
135.5	1350 2-14-95 404115	NA	6	SAA	SW	NA	PiD 0 Bγ 50
136.0	1350 2-14-95 404115	NA	6	SAA	SW	NA	PiD 0 Bγ 50
136.5	1350 2-14-95 404115	NA	6	SAA	SW	NA	PiD 0 Bγ 50
137.0	1350 2-14-95 404115	NA	6	SAA	SW	NA	PiD 0 Bγ 50 SIEVE-2001265 65 TOTU-2001265 55

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 32		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 32		

NOTES: None

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-049

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
137.0	1540 2-14-95 404116	NA	0	5Y 3/2 dark olive gray. well graded sand w/fine to coarse gravel. wet	SW	NA	P.D 0 Bg 50
137.5	1540 2-14-95 404116	NA	6	SAA	SW	NA	P.D 0 Bg 50
138.0	1540 2-14-95 404116	NA	6	SAA	SW	NA	P.D 0 Bg 50
138.5	1540 2-14-95 404116	NA	6	SAA	SW	NA	P.D 0 Bg 50
139.0	1540 2-14-95 404116	NA	6	SAA	SW	NA	P.D 0 Bg 50
139.5	1540 2-14-95 404116	NA	6	SAA	SW	NA	P.D 0 Bg 50
140.0	1540 2-14-95 404116	NA	6	SAA	SW	NA	P.D 0 Bg 50
140.5	1540 2-14-95 404116	NA	6	SAA	SW	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 32		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 32		

NOTES: none

000316

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-050

PAGE 41 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 995 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
140.5	1543 2-14-95 404116	NA	6	SAA	SW	NA	P.D 0 Bg 50
141.0	1540 2-14-95 404116	NA	6	5Y 3/2 DARK OLIVE GRAY. POORLY GRADED MED SAND W/ FINE TO COARSE GRAVEL + COBBLE 3"X2"X2". WET	SP	NA	P.D 0 Bg 50
141.5	1540 2-14-95 404116	NA	6	SAA	SP	NA	P.D 0 Bg 50
142.0	1545 2-14-95 404117	NA	6	5Y 3/2 DARK OLIVE GRAY. FINE TO COARSE GRAVEL. WET. WELL GRADED SAND	SW	NA	P.D 0 Bg 50
142.5	1545 2-14-95 404117	NA	6	SAA	SW	NA	P.D 0 Bg 50
143.0	1545 2-14-95 404117	NA	6	SAA W/ COBBLE 3"X3"X2"	SW	NA	P.D 0 Bg 50
143.5	1545 2-14-95 404117	NA	6	SAA	SW	NA	P.D 0 Bg 50
144.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 32		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 32		

NOTES: None

000317

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-051

PAGE 42 OF 54

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME:

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
144.0	1545 2-14-95 404117	NA	6	SAA	SW	NA	PID 0 Bγ 50
144.5	1545 2-14-95 404117	NA	6	SAA	SW	NA	PID 0 Bγ 50
145.0	1545 2-14-95 404117	NA	6	5Y 3/2 DARK olive gray. Poorly graded Fine sand w/ trace of fine gravel. WET.	SP	NA	PID 0 Bγ 50
145.5	1545 2-14-95 404117	NA	6	SAA	SP	NA	PID 0 Bγ 50
146.0	1545 2-14-95 404117	NA	6	5Y 3/2 DARK Olive gray. Well graded SAND w/ fine to coarse gravel. WET	SW	NA	PID 0 Bγ 50
146.5	1545 2-14-95 404117	NA	6	SAA w/ COBBLE 5"x3"x2"	SW	NA	PID 0 Bγ 50 Sieve-200126567 Total-200126558
147.0	905 2-15-95 404118	NA	6	~~SAA~~ RG 2/15/95 2.5Y 4/2 Dark grayish Brown Poorly Graded Fine Sand with a Trace of Fine Gravel	SP	NA	PID 0 Bγ 50
147.5							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 32		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 32		

NOTES: none

000318

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-052

PROJECT NAME: South Field Pump Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
147.5	0905 2-15-95 404113	NA	6	SAA	SP	NA	P.D 0 Bg 50
148.0	0905 2-15-95 404118	NA	6	SAA	SP	NA	P.D 0 Bg 50
148.5	0905 2-15-95 404118	NA	6	SAA	SP	NA	P.D 0 Bg 50
149.0	0905 2-15-95 404118	NA	6	SAA	SP	NA	P.D 0 Bg 50
149.5	0905 2-15-95 404118	NA	6	SAA	SP	NA	P.D 0 Bg 50
150.0	0905 2-15-95 404118	NA	6	SAA	SP	NA	P.D 0 Bg 50
150.5	0905 2-15-95 404118	NA	6	SAA	SP	NA	P.D 0 Bg 50
151.0	0905 2-15-95 404115	NA	6	SAA	SP	NA	P.D 0 Bg 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	0	2-15-95	900
ALPHA	NA	NA	NA
BETA / GAMMA	50	2-15-95	900

NOTES: None

CONTROL NO.: 500332-31556-052

FEMP

LITHOLOGIC LOG

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ROTOSONIC

DRILLER / HELPER: BROWER/FONTANA

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
151.0	C9C5 2-15-95 404118	NA	6	SAA	SP	NA	PID 0 BY 50
152.0	C9C5 2-15-95 404118	NA	6	SAA	SP	NA	PID 0 BY 50
152.5	C9C 2-15-95 404119	NA	6	SAA	SP	NA	PID 0 BY 50
153.0	C9C 2-15-95 404119	NA	6	SAA	SP	NA	PID 0 BY 50
153.5	C9C 2-15-95 404119	NA	6	2.5 Y 4/2 DARK GRAY/SH BROWN. POORLY GRADED MED W/ TRACE OF FINE GRAVEL. WET	SP	NA	PID 0 BY 50
154.0	C9C 2-15-95 404119	NA	6	SAA	SP	NA	PID 0 BY 50
154.5	C9C 2-15-95 404119	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: none

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-054

PAGE 45 OF 54

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03 32

BORING NUMBER: 31554

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
154.5 – 155.0	0910 2-15-95 404119	NA	6	SAA	SP	NA	PID 0 BY 50
155.5	0910 2-15-95 404119	NA	6	SAA	SP	NA	PID 0 BY 50
156.0	0910 2-15-95 404119	NA	6	SAA	SP	NA	PID 0 BY 50
156.5	0910 2-15-95 404119	NA	6	2.5Y 4/2 DARK grayish BROWN poorly GRADED FINE SAND w/ TRACE of GRAVEL. WET	SP	NA	PID 0 BY 50
157.0	0910 2-15-95 404119	NA	6	SAA	SP	NA	PID 0 BY 50 SIEVE - 200126564 TOTO - 200126562
157.5	1115 2-15-95 404120	NA	6	2.5Y 3/2 VERY DARK GRAYISH BROWN poorly GRADED MED SAND w/TRACE FINE GRAVEL. WET	SP	NA	PID 0 BY 50
158.0	1115 2-15-95 404120	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

000321

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-055

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: RoTosonic

DRILLER / HELPER: Brown / Fontaine

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
158.0 – 158.5	1115 2-15-95 4C4120	NA	6	SAA	SP	NA	PID 0 By 50
159.0	1115 2-15-95 4C4120	NA	6	SAA	SP	NA	PID 0 By 50
159.5	1115 2-15-95 4C4120	NA	6	SAA	SP	NA	PID 0 By 50
160.0	1115 2-15-95 4C4120	NA	6	SAA	SP	NA	PID 0 By 50
160.5	1115 2-15-95 4C4120	NA	6	SAA	SP	NA	PID 0 By 50
161.0	1115 2-15-95 4C4120	NA	6	SAA	SP	NA	PID 0 By 50
161.5	1115 2-15-95 4C4120	NA	6	SAA	SP	NA	PID 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3881

G:/WPSC/94-778.DRW (11-23-9

CONTROL NO.: 500332-31556 — 056	FEMP LITHOLOGIC LOG	PAGE 47 OF 54

PROJECT NAME: South Field Pumping Test			PROJECT NO.: 50.03.32
BORING NUMBER: 31556	COORDINATES: N/A	RELATED FAL NO.s: N/A	
SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 2/10/95
GEOLOGIST: KEN GEIGER	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 2/16/95
WATER USED DURING DRILLING: 895 gal	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fountain	

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
161.5 – 162.0	1115 2-15-95 404120	NA	6	SAA	SP	NA	PID 0 BY 50
162.5	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 BY 50
163.0	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 BY 50
163.5	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 BY 50
164.0	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 BY 50
164.5	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 BY 50
165.0	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: NONE

000323

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

CONTROL NO.: 500332-31556-05[illegible]	FEMP LITHOLOGIC LOG	PAGE 48 OF 54

PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03.32

BORING NUMBER: 31556	COORDINATES: N/A	RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 2/10/95
GEOLOGIST: KEN GEIGER	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
165.0 – 165.5	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 By 50
165.5 – 166.0	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 By 50
166.0 – 166.5	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 By 50
166.5 – 167.0	1120 2-15-95 404121	NA	6	SAA	SP	NA	PID 0 By 50 SIEVE - 200126571 TOTU - 200126564
167.0 – 167.5	1325 2-15-95 404122	NA	6	2.5Y 3/3 DARK OLIVE BROWN. Poorly GRADED FINE SAND w/ TRACE OF FINE GRAVEL	SP	NA	PID 0 By 50
167.5 – 168.0	1325 2-15-95 404122	NA	6	SAA	SP	NA	PID 0 By 50
168.0 – 168.5	1325 2-15-95 404122	NA	6	SAA	SP	NA	PID 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

000324

CONTROL NO.: 500332-31556-058

FEMP
LITHOLOGIC LOG

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.(s): N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ROTOSONIC

DRILLER / HELPER: Brown/Fontaine

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
168.5	1325 2-15-95 404122	NA	6	SAA	SP	NA	PID 0 By 50
169.0	1325 2-15-95 404122	NA	6	2.5 Y 3/3 DARK OLIVE BROWN. POORLY GRADED COARSE SAND W/SOME FINE GRAVEL. WET	SP	NA	PID 0 By 50
169.5	1325 2-15-95 404122	NA	6	SAA	SP	NA	PID 0 By 50
170.0	1325 2-15-95 404122	NA	6	SAA	SP	NA	PID 0 By 50
170.5	1325 2-15-95 404122	NA	6	SAA	SP	NA	PID 0 By 50
171.0	1325 2-15-95 404122	NA	6	2.5 Y 3/3 DARK OLIVE BROWN. POORLY GRADED FINE SAND W/ TRACE FINE GRAVEL	SP	NA	PID 0 By 50
171.5	1325 2-15-95 404122	NA	6	SAA	SP	NA	PID 0 By 50
172.0							

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SAA	19 43	
ALPHA	NA	NA	NA
BETA / GAMMA	SAA	19 43	

NOTES: none

000325

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-059

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: ROTOSONIC

DRILLER / HELPER: Brewer/Fountain

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
172.0	1330 2-15-95 404123	NA	6	2.5Y 3/3 DARK OLIVE BROWN. POORLY GRADED COARSE SAND W/ FINE GRAVEL. WET.	SP	NA	PID 0 BY 50
172.5	1330 2-15-95 404123	NA	6	SAA	SP	NA	PID 0 BY 50
173.0	1330 2-15-95 404123	NA	6	2.5Y 3/3 DARK OLIVE BROWN. POORLY GRADED FINE SAND W/ TRACE OF FINE GRAVEL. WET.	SP	NA	PID 0 BY 50
173.5	1330 2-15-95 404123	NA	6	SAA	SP	NA	PID 0 BY 50
174.0	1330 2-15-95 404123	NA	6	SAA	SP	NA	PID 0 BY 50
174.5	1330 2-15-95 404123	NA	6	SAA	SP	NA	PID 0 BY 50
175.0	1330 2-15-95 404123	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See 1943		
ALPHA	NA	NA	NA
BETA / GAMMA	See 1943		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-778.DRW (11-23-94)

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-060

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: ~~615~~ 31556 KG 2/15/95

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE STARTED: 2/10/95

GEOLOGIST: KEN GEIGER

GROUNDWATER LEVEL: N/A

DATE: N/A

TIME: N/A

DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
175.5 – 176.0	1330 2-15-95 404123	NA	6	SAA	SP	NA	PID 0 BY 50
176.5	1330 2-15-95 404123	NA	6	SAA	SP	NA	PID 0 BY 50
177.0	1330 2-15-95 404123	NA	6	SAA	SP	NA	PID 0 BY 50 SIEVE-200126573 TOTU-200126566
177.5	1600 2-15-95 404124	NA	6	2.5Y 3/2 Very Dark Grayish Brown Poorly Graded Medium To Coarse Sand with Some Fine To Coarse Gravel wet	SP	NA	PID 0 BY 50
178.0	1600 2-15-95 404124	NA	6	SAA	SP	NA	PID 0 BY 50
178.5	1600 2-15-95 404124	NA	6	SAA	SP	NA	PID 0 BY 50
179.0	1600 2-15-95 404124	NA	6	SAA	SP	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See	pg 43	
ALPHA	NA	NA	NA
BETA / GAMMA	See	pg 43	

NOTES: None

000327

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

CONTROL NO.: 500332-31556-061	FEMP LITHOLOGIC LOG	PAGE 52 OF 54

PROJECT NAME: South Field Pumping Test	PROJECT NO.: 50.03.32

BORING NUMBER: 31556	COORDINATES: N/A	RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE STARTED: 2/10/95
GEOLOGIST: KEN GEIGER	GROUNDWATER LEVEL: N/A	DATE: N/A	TIME: N/A	DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal	DRILLING CONTRACTOR: Alliance	DRILLING EQUIPMENT: Rotosonic	DRILLER / HELPER: Brower/Fountner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
179.0 – 179.5	1600 2-15-95 404124	NA	6	2.5Y 3/2 very Dark Grayish Brown well graded Sand with some Fine and Coarse Gravel wet	SW	NA	PID 0 BY 50
179.5 – 180.0	1600 2-15-95 404124	NA	6	SAA	SW	NA	PID 0 BY 50
180.0 – 180.5	1600 2-15-95 404124	NA	6	10YR 5/6 Yellowish Brown poorly Graded medium Sand with some fine Gravel. wet	SP	NA	PID 0 BY 50
180.5 – 181.0	1600 2-15-95 404124	NA	6	SAA	SP	NA	PID 0 BY 50 S: EVE-2001 26 5 75 TOTU-2001 26 5 68 DUP-2001 26 5 46
181.0 – 181.5	1600 2-15-95 404124	NA	6	2.5Y 4/4 Olive Brown Highly weathered Shale	NA	NA	PID 0 BY 50
181.5 – 182.0	1600 2-15-95 404124	NA	6	2.5Y N4/ Dark Gray Shale	NA	NA	PID 0 BY 50
182.0 – 182.5	1605 2-15-95 404125	NA	6	SAA	NA	NA	PID 0 BY 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FS-F-3681

G:/WPSC/94-776.DRW (11-23-94)

000328

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-062

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: N/A

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 895 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower / Four Tuck

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
152.5	1605 2-15-95 404125	NA	6	SAA	NA	NA	PID 0 By 50
153.0	1605 2-15-95 404125	NA	6	SAA	NA	NA	PID 0 By 50
153.5	1605 2-15-95 404125	NA	6	SAA	NA	NA	PID 0 By 50
154.0	1605 2-15-95 404125	NA	6	SAA	NA	NA	PID 0 By 50
154.5	1605 2-15-95 404125	NA	6	SAA	NA	NA	PID 0 By 50
155.0	1605 2-15-95 404125	NA	6	SAA	NA	NA	PID 0 By 50
155.5	1605 2-15-95 404125	NA	6	SAA	NA	NA	PID 0 By 50
156.0	1605 2-15-95 404127	NA	6	SAA	NA	NA	PID 0 By 50

INSTRUMENT	BACKGROUND	DATE	TIME
PID	See pg 43		
ALPHA	NA	NA	NA
BETA / GAMMA	See pg 43		

NOTES: None

000329

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

FEMP

LITHOLOGIC LOG

CONTROL NO.: 500332-31556-063

PROJECT NAME: South Field Pumping Test

PROJECT NO.: 50.03.32

BORING NUMBER: 31556

COORDINATES: NA

RELATED FAL NO.s: N/A

SURFACE ELEVATION: N/A

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE STARTED: 2/10/95

GEOLOGIST: Ken Geiger

GROUNDWATER LEVEL: N/A | DATE: N/A | TIME: N/A | DATE COMPLETED: 2/16/95

WATER USED DURING DRILLING: 845 gal

DRILLING CONTRACTOR: Alliance

DRILLING EQUIPMENT: Rotosonic

DRILLER / HELPER: Brower/Fourtner

DEPTH (FEET)	SAMPLE TIME, DATE, AND NUMBER	BLOWS (per 6 inch)	RECOVERY (inches)	DESCRIPTION (Colors identified per Munsell Color Chart)	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
186.5	1605 2/15/95 4/04/125	N/A	6	SAA	N/A	N/A	PID 0 Bq 50
187	1605 2/15/95 4/04/125	N/A	6	SAA	N/A	N/A	PID 0 Bq 50
				Bottom of Boring 187.0 Feet.			

INSTRUMENT	BACKGROUND	DATE	TIME
PID	SEE Pg. 43		
ALPHA	N/A	NA	N/A
BETA / GAMMA	SEE Pg. 43		

NOTES: NONE

* SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST.

G:/WPSC/94-778.DRW (11-23-94)