

Appendix A
Soil Boring Logs
FMI Sierrita Voluntary Remediation Program
(Click On Boring Log or Well Number In Index To Connect To Boring Log)

CLEAR Plant
CP-JS-01
CP-JS-02
CP-JS-03
CP-JS-04
CP-M04
CP-M06
CP-N08
CP-O03
CP-O09
CP-P04
CP-P05
CP-P07
CP-P12
CP-Q09
CP-SD-01
CP-SD-02
CP-SD-03
CP-SD-04
CP-SD-05
CP-SD-06
CP-SD-07
CP-SD-08
CP-SD-09
CP-SD-10

Old D Pond
OD-JS-01
OD-JS-02
OD-JS-03
OD-SD-01
OD-SD-02
OD-SD-03
OD-SD-04
OD-SD-05
OD-SD-06

E Pond
E-JS-01
E-JS-02

Evaporation Pond
EV-JS-01
EV-JS-02

Esperanza Mill
EM-C22
EM-E24
EM-G27
EM-H22
EM-JS-01
EM-JS-02
EM-JS-06
EM-JS-07
EM-JS-08
EM-K24
EM-M26
EM-N29
EM-P24
EM-U25
EM-X26

C Pond
C-JS-01
C-JS-02
C-JS-03
C-JS-04
C-JS-05

C Pond Spoils
CS-JS-01
CS-JS-02
CS-JS-03
CS-JS-04
CS-JS-05
CS-JS-06

Raffinate Pond
RA-JS-01
RA-JS-02
RA-JS-03
RA-JS-04
RA-JS-05
RA-SD-01
RA-SD-02

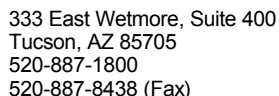
Esperanza Tailing
ET-SB01
ET-SB02

Rhenium Ponds
RP-JS-01
RP-JS-02

Sierrita Tailing
ST-SB01
ST-SB03
ST-SB04
ST-SB05
ST-SB06

Monitor Wells
MW-2008-01
MW-2008-02
MW-2008-03
MW-2008-04
MW-2008-05
MW-2008-06
MW-2008-07
MW2008-08
MW-2008-09
MW-2008-10
MW-2008-11
MW-2008-12
MW-2008-13
MW-2008-14
MW-2008-15

Temporary Wells
TW-2008-02
TW-2008-03
TW-2008-04
TW-2008-05
TW-2008-06
TW-2008-07
TW-2008-08
TW-2008-09
TW-2008-10
TW-2008-11
TW-2008-12
TW-2008-13
TW-2008-14
TW-2008-15



PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Env'tl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 07/15/2008 09:40 AM
FINISH DATE/TIME: 07/15/2008 10:40 AM

LATITUDE (NAVD27): 954282.308
LONGITUDE (NAVD 27): 320994.678

TOP OF GROUND ELEVATION: 3668.97 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

[illegible]



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SHEET 1 of 1

BORING LOG: CP-JS-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Shawn Miller
LOGGED BY: Kevin Walsh, Rick Smith
START DATE/TIME: 07/11/2008 01:15 PM
FINISH DATE/TIME: 07/11/2008 01:38 PM

LATITUDE (NAVD27): 953875.828
LONGITUDE (NAVD 27): 320394.158

TOP OF GROUND ELEVATION: 3683.74 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-JS-02-0-1	SM		Silty Sand, sub-angular, sub-rounded, dark gray (7.5yr 4/0), null odor, slightly moist, loose, null cementation, low plasticity, fine sand.
		CP-JS-02-1-3	SM		Silty Sand, sub-angular, sub-rounded, strong brown (7.5yr 4/6), null odor, dry, loose, null cementation, low plasticity, fine sand.
	3680		NONE		Granodiorite, refusal at 4' bgs.
5					
	3675				
10					
	3670				
15					
	3665				
20					



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SHEET 1 of 1

BORING LOG: CP-JS-03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/14/2008 08:57 AM
FINISH DATE/TIME: 07/14/2008 10:13 AM

LATITUDE (NAVD27): 954350.808
LONGITUDE (NAVD 27): 319792.603

TOP OF GROUND ELEVATION: 3659.89 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3655	CP-JS-03-0-1 CP-JS-03-1-3	SM		Silty Sand with gravel, sub-angular, sub-rounded, dark yellowish brown (10yr 4/4), null odor, moist, loose, null cementation, null plasticity, fine gravel.
		CP-JS-03-5-7	SM		Silty Sand with gravel, sub-angular, sub-rounded, light yellowish brown (10yr 6/4), null odor, moist, loose, null cementation, null plasticity, fine gravel.
10	3650		NONE		Granodiorite, refusal at 7' bgs.
15	3645				
20	3640				



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SHEET 1 of 2

BORING LOG: CP-JS-04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/27/2008 10:20 AM
FINISH DATE/TIME: 08/27/2008 11:02 AM

LATITUDE (NAVD27): 954142.572
LONGITUDE (NAVD 27): 321095.952

TOP OF GROUND ELEVATION: 3696.63 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-JS-04-0-1	SM		Silty sand, fine grained, pale brown, dry, loose.
	3695	CP-JS-04-1-3	CL		Decomposed granite clay.
5					
	3690	CP-JS-04-5-7	SM		Silty sand with gravel, fine grained with fine gravel, pale brown, dry, loose.
			CL		Decomposed granite clay.
10					
	3685	CP-JS-04-10-12	SM		Silty sand with gravel, fine grained with fine gravels, pale brown, dry, loose.
15					
	3680	CP-JS-04-15-17	SM		Silty sand, fine grained, pale brown, dry, loose, mica minerals present. Moist at 19' bgs.
20					



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SHEET 2 of 2

BORING LOG: CP-JS-04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/27/2008 10:20 AM
FINISH DATE/TIME: 08/27/2008 11:02 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3675	CP-JS-04-20			
25	3670				
30	3665				
35	3660				
40	3655				



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SHEET 1 of 1

BORING LOG: CP-M04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

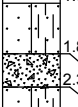
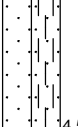
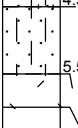
DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Rick Smith
START DATE/TIME: 07/11/2008 09:45 AM
FINISH DATE/TIME: 07/11/2008 10:15 AM

LATITUDE (NAVD27): 953869.388
LONGITUDE (NAVD 27): 320977.257

TOP OF GROUND ELEVATION: 3694.99 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-M04-0-1			
		CP-M04-1-2.5	SP-SM NONE		1.0' Poorly Graded Sand with silt, dark yellowish brown (10yr 4/4), null odor, slightly moist, loose, null cementation, null plasticity, fine sand, coarse gravel. 1.8' 6" layer of concrete 2.3'
			SP-SM		Poorly Graded Sand with silt, dark yellowish brown (10yr 4/4), null odor, slightly moist, loose, null cementation, null plasticity, fine sand, coarse gravel.
5	3690	CP-M04-5-5.4	SM NONE		4.5' Silty Sand, light yellowish brown (10yr 6/4), null odor, slightly moist, loose, null cementation, null plasticity, fine sand, coarse gravel, decomposed/weathered granodiorite. 5.5' Granodiorite, refusal at 5.5' bgs.
10	3685				
15	3680				
20	3675				



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SHEET 1 of 1

BORING LOG: CP-M06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Shawn Miller
LOGGED BY: Kevin Walsh, Rick Smith
START DATE/TIME: 07/11/2008 12:48 PM
FINISH DATE/TIME: 07/11/2008 01:07 PM

LATITUDE (NAVD27): 953871.612
LONGITUDE (NAVD 27): 320587.281

TOP OF GROUND ELEVATION: 3688.12 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-M06-0-1			
		CP-M06-1-3	SM		
	3685				
5					
	3680				
10					
	3675				
15					
	3670				
20					

4.0'
Refusal at 4' at concrete.



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SHEET 1 of 1

BORING LOG: CP-N08

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Shawn Miller
LOGGED BY: Kevin Walsh, Rick Smith
START DATE/TIME: 07/11/2008 01:52 PM
FINISH DATE/TIME: 07/11/2008 02:05 PM

LATITUDE (NAVD27): 954088.911
LONGITUDE (NAVD 27): 320180.045

TOP OF GROUND ELEVATION: 3674.75 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3670	CP-N08-0-1	SM		Silty Sand with gravel, sub-angular, sub-rounded, olive brown (2.5yr 4/4), null odor, dry, loose, null cementation, null plasticity, fine gravel.
		CP-N08-1-3	SM		Silty Sand with gravel, sub-angular, sub-rounded, light olive brown (2.5yr 5/4), null odor, dry, loose, null cementation, null plasticity, fine gravel.
		CP-N08-5-7	SM		Silty Sand with gravel, sub-angular, sub-rounded, grayish brown (10yr 5/2), null odor, dry, loose, null cementation, null plasticity, fine gravel.
10	3665	CP-N08-10-11	SM		Silty Sand with gravel, sub-angular, sub-rounded, grayish brown and brownish yellow (10yr 5/2 - 6/8), null odor, moist, loose, null cementation, null plasticity, fine gravel. Partially decomposed granodiorite.
15	3660		NONE		Granodiorite, refusal at 11' bgs
20	3655				



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SHEET 1 of 1

BORING LOG: CP-003

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Shawn Miller
LOGGED BY: Rick Smith
START DATE/TIME: 07/11/2008 10:50 AM
FINISH DATE/TIME: 07/11/2008 11:07 AM

LATITUDE (NAVD27): 954246.329
LONGITUDE (NAVD 27): 321179.981

TOP OF GROUND ELEVATION: 3677.02 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-003-0-1	SW		Well Graded Sand, angular, dark yellowish brown (10yr 4/4), null odor, slightly moist, loose, null cementation, null plasticity, coarse sand. Weathered granodiorite.
	3675	CP-003-1-3	SW		Well Graded Sand, angular, light gray (10yr), null odor, slightly moist, loose, null cementation, null plasticity, coarse sand. Weathered granodiorite grades to competent granodiorite.
			NONE		Granodiorite, refusal at 3' bgs.
5					
	3670				
10					
	3665				
15					
	3660				
20					



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SHEET 1 of 1

BORING LOG: CP-009

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Shawn Miller
LOGGED BY: Kevin Walsh, Rick Smith
START DATE/TIME: 07/11/2008 02:48 PM
FINISH DATE/TIME: 07/11/2008 03:10 PM

LATITUDE (NAVD27): 954285.716
LONGITUDE (NAVD 27): 319982.491

TOP OF GROUND ELEVATION: 3661.23 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3660	CP-009-0-1	SM		Silty Sand, sub-angular, sub-rounded, yellowish brown (10yr 5/4), no odor, dry, loose, null cementation, null plasticity, fine grained
		CP-009-1-3	SM		Silty Sand, sub-angular, sub-rounded, brown (10yr 5/3), no odor, dry, loose, null cementation, null plasticity, fine grained
5			CL		Red clay lense, possible odor. Stained.
	3655	CP-009-5-7	SM		Silty Sand, sub-angular, rounded, light gray (10yr 7/1), no odor, dry, loose, null cementation, null plasticity, fine grained
			SM		Silty Sand, sub-angular, sub-rounded, dark yellow with brown (10yr 4/4), no odor, dry, loose, null cementation, null plasticity, fine grained
10			SM		Silty Sand, sub-angular, sub-rounded, black (10yr 2/1), no odor, moist, loose, null cementation, null plasticity, fine grained. significant layer of dark staining 9-14 feet, decomposed granodiorite
	3650	CP-009-10-12	SM		
15			SM		Silty Sand, sub-angular, sub-rounded, grayish brown (10yr 5/2), no odor, moist, loose, null cementation, null plasticity, fine grained.
	3645	CP-009-15-17	SM		
			NONE		Granodiorite, refusal at 17.5' bgs.
20					



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SHEET 1 of 1

BORING LOG: CP-P04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Rick Smith, Armando Jimenez
START DATE/TIME: 07/15/2008 11:09 AM
FINISH DATE/TIME: 07/15/2008 11:21 AM

LATITUDE (NAVD27): 954475.105
LONGITUDE (NAVD 27): 320989.125

TOP OF GROUND ELEVATION: 3658.86 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-P04-0-1			
		CP-P04-1-3	SM		
	3655				
5			NONE	4.0'	Granodiorite, refusal at 4' bgs.
	3650				
10					
	3645				
15					
	3640				
20					



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SHEET 1 of 1

BORING LOG: CP-P05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/15/2008 01:13 PM
FINISH DATE/TIME: 07/15/2008 01:42 PM

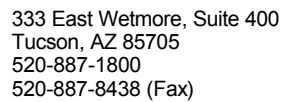
LATITUDE (NAVD27): 954486.199
LONGITUDE (NAVD 27): 320786.827

TOP OF GROUND ELEVATION: 3664.75 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-P05-0-1	SM		Silty Sand with gravel, sub-angular, sub-angular, brown (7.5yr 5/4), null odor, dry, null cemenation, null plasticity, fine gravel. Transitions into a granodiorite.
		CP-P05-1-3	NONE		Granodiorite, refusal at 3.5' bgs.
5	3660				
10	3655				
15	3650				
20	3645				





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SHEET 1 of 1

BORING LOG: CP-P12

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/23/2008 11:01 AM
FINISH DATE/TIME: 07/23/2008 11:11 AM

LATITUDE (NAVD27): 954486.649
LONGITUDE (NAVD 27): 319392.903

TOP OF GROUND ELEVATION: 3646.28 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3645	CP-P12-0-1			
		CP-P12-1-3	SM		
5			NONE		3.5' Saprolite, decomposed granite, light gray. Refusal at 5.5' bgs.
	3640				
10					
	3635				
15					
	3630				
20					



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SHEET 1 of 1

BORING LOG: CP-Q09

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/23/2008 10:07 AM
FINISH DATE/TIME: 07/23/2008 10:30 AM

LATITUDE (NAVD27): 954645.438
LONGITUDE (NAVD 27): 320001.438

TOP OF GROUND ELEVATION: 3651.86 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-Q09-0-1	SC		Clayey Sand, sub-angular, dark brown (7.5yr 4/4), null odor, dry, loose, null cementation, null plasticity, fine sand.
	3650	CP-Q09-1-3	NONE		Saporolite, light gray, HCL reaction. Refusal at 3' bgs.
5					
	3645				
10					
	3640				
15					
	3635				
20					



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SHEET 1 of 1

BORING LOG: CP-SD-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

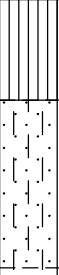
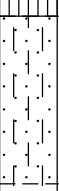
DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/16/2008 08:27 AM
FINISH DATE/TIME: 07/16/2008 08:30 AM

LATITUDE (NAVD27): 954582.97
LONGITUDE (NAVD 27): 320952.914

TOP OF GROUND ELEVATION: 3654.44 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-SD-01-0-1.5	MH		Sandy Silt, very dark grayish brown (10yr 3/2), null odor, dry, loose, null cementation, null plasticity, fine silt.
		CP-SD-01-1.5-3	SM		Silty Sand, sub-angular, sub-round, brown (10yr 5/3), null odor, dry, loose consistency, null cementation, null plasticity, fine sand.
5	3650				
10	3645				
15	3640				
20	3635				



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SHEET 1 of 1

BORING LOG: CP-SD-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/16/2008 09:04 AM
FINISH DATE/TIME: 07/16/2008 09:08 AM

LATITUDE (NAVD27): 954693.165
LONGITUDE (NAVD 27): 320849.849

TOP OF GROUND ELEVATION: 3648.21 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-SD-02-0-1.5	SW		Well Graded Sand, sub-angular, sub-round, gray, null odor, dry, loose, null cementation, null plasticity, medium sand.
		CP-SD-02-1.5-3	SW		Well Graded Sand, sub-angular, sub-round, light brown (10yr 5/2), null odor, dry, loose, null cementation, null plasticity, fine sand.
			SW		Silty Sand with gravel, sub-angular, sub-round, (10yr 3/4), null odor, dry, loose, null cementation, null plasticity, fine gravel.
3645					
5					
3640					
10					
3635					
15					
3630					
20					



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SHEET 1 of 1

BORING LOG: CP-SD-03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/16/2008 09:53 AM
FINISH DATE/TIME: 07/16/2008 10:08 AM

LATITUDE (NAVD27): 954603.061
LONGITUDE (NAVD 27): 320532.696

TOP OF GROUND ELEVATION: 3652.33 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-SD-03-0-1.5			
	3650	CP-SD-03-1.5-3	SM		Silty Sand with gravel, sub-angular, sub-round, dark yellowish brown (10yr 4/4), null odor, dry, loose, loose cementation, null plasticity, fine sand and gravel.
5					
	3645				
10					
	3640				
15					
	3635				
20					



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SHEET 1 of 1

BORING LOG: CP-SD-04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Rick Smith, Armando Jimenez
START DATE/TIME: 07/17/2008 02:50 PM
FINISH DATE/TIME: 07/17/2008 02:52 PM

LATITUDE (NAVD27): 954610.17
LONGITUDE (NAVD 27): 320390.753

TOP OF GROUND ELEVATION: 3648.34 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-SD-04-0-1.5	SW-SM		Well Graded Sand, angular, dark grayish brown (10yr 4/2), null odor, moist, loose, null cementation, null plasticity, coarse sand.
		CP-SD-04-1.5-3	SW-SM		Well Graded Sand with silt, angular, light gray (10yr 7/2), null odor, dry, loose, null cementation, null plasticity, coarse gravel.
	3645				
5					
	3640				
10					
	3635				
15					
	3630				
20					



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SHEET 1 of 1

BORING LOG: CP-SD-05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/16/2008 09:42 AM
FINISH DATE/TIME: 07/16/2008 09:50 AM

LATITUDE (NAVD27): 954737.051
LONGITUDE (NAVD 27): 320455.586

TOP OF GROUND ELEVATION: 3645.19 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

REPORT TUCSON-ENVIRONMENTAL | PROJECT: FMI SIERRITA VRP-PHASE 1 | TASK 17: PHASE 1 REPORT PREVIOUS APPENDICES APPENDIX A - SOIL BORING LOGS | FMI SIERRITA VRP BORING LOGS | GP-UBP4RVRUS TUCSON V4.1.GLB | PRINTED 8/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3645		SW		Well Graded Sand, sub-angular, sub-round, gray, null odor, dry, loose, null cementation, null plasticity, fine sand.
		CP-SD-05-0-1.5			
			MH		Sandy Silt, yellowish brown (10yr 3/4), null odor, dry, loose, null cementation, null plasticity, fine silt.
		CP-SD-05-1.5-3			
					Granodiorite, decomposed.
5	3640				
10	3635				
15	3630				
20					



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SHEET 1 of 1

BORING LOG: CP-SD-06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/16/2008 09:25 AM
FINISH DATE/TIME: 07/16/2008 09:36 AM

LATITUDE (NAVD27): 954771.96
LONGITUDE (NAVD 27): 320357.333

TOP OF GROUND ELEVATION: 3641.88 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-SD-06-0-1.5	SW		Well Graded - Poorly Sorted Sand, sub-angular, sub-round, gray, null odor, dry, loose, null cementation, null plasticity, medium sand.
	3640	CP-SD-06-1.5-3	MH		Sandy Silt, dark yellowish brown (10yr 3/4), null odor, dry, loose, null cementation, null plasticity, fine silt.
5					
	3635				
10					
	3630				
15					
	3625				
20					



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SHEET 1 of 1

BORING LOG: CP-SD-07

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/23/2008 10:41 AM
FINISH DATE/TIME: 07/23/2008 10:47 AM

LATITUDE (NAVD27): 954528.281
LONGITUDE (NAVD 27): 319414.003

TOP OF GROUND ELEVATION: 3638.37 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-SD-07-0-1.5	SC		Clayey Sand, sub-angular, dark brown (7.5yr 4/4), null odor, dry, loose, null cementation, null plasticity, fine sand.
		CP-SD-07-1.5-3	SC		Clayey Sand with gravel, sub-angular, (7.5yr 7/2), null odor, dry, loose, null cementation, null plasticity, fine gravel. decomposed granite.
	3635				
5					
	3630				
10					
	3625				
15					
	3620				
20					



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SHEET 1 of 1

BORING LOG: CP-SD-08

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/28/2008 09:05 AM
FINISH DATE/TIME: 07/28/2008 09:10 AM

LATITUDE (NAVD27): 954718.207
LONGITUDE (NAVD 27): 319410.804

TOP OF GROUND ELEVATION: 3625.42 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3625	CP-SD-08-0-1.5	ML		Silt with sand, sub-angular, dark yellowish brown (10yr 3/4), null odor, dry, loose, null cementation, null plasticity, fine sand.
		CP-SD-08-1.5-3	SM	1.5'	Silty Sand with gravel, sub-angular, light yellowish brown (10yr 6/4), null odor, dry, loose, null cementation, null plasticity, fine gravel.
5	3620				
10	3615				
15	3610				
20					



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SHEET 1 of 1

BORING LOG: CP-SD-09

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/28/2008 10:36 AM
FINISH DATE/TIME: 07/28/2008 10:39 AM

LATITUDE (NAVD27): 953828.645
LONGITUDE (NAVD 27): 319252.949

TOP OF GROUND ELEVATION: 3638.29 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-OD-09-0-1.5	SM		Silty Sand with gravel, sub-angular, dark yellowish brown (10yr 3/4), null odor, moist, loose, null cementation, null plasticity, fine gravel.
		CP-OD-09-1.5-3	SP		Poorly Graded Sand with gravel, sub-angular, very pale brown (10yr 7/4), null odor, moist, loose, null cementation, null plasticity, fine gravel.
3635					
5					
3630					
10					
3625					
15					
3620					
20					



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SHEET 1 of 1

BORING LOG: CP-SD-10

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/28/2008 09:55 AM
FINISH DATE/TIME: 07/28/2008 10:00 AM

LATITUDE (NAVD27): 953929.169
LONGITUDE (NAVD 27): 318953.049

TOP OF GROUND ELEVATION: 3629.87 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CP-SD-10-0-1.5	ML		Silt with sand, sub-angular, dark yellowish brown (10yr 3/4), null odor, dry, loose, null cementation, null plasticity, fine sand.
		CP-SD-10-1.5-3	SM		Silty Sand, sub-angular, light gray (10yr 7/2), null odor, dry, loose, null cementation, null plasticity, fine gravel.
5	3625				
10	3620				
15	3615				
20	3610				



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SHEET 1 of 1

BORING LOG: OD-JS-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/29/2008 09:13 AM
FINISH DATE/TIME: 07/29/2008 09:45 AM

LATITUDE (NAVD27): 954286.624
LONGITUDE (NAVD 27): 318424.783

TOP OF GROUND ELEVATION: 3600.79 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3600	OD-JS-01-0-1	ML		Sandy silt, fine grained with fine sand, dark yellowish brown, moist.
		OD-JS-01-1-3	NONE		Decomposed granite, refusal at 3' bgs.
5	3595				
10	3590				
15	3585				
20					



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SHEET 1 of 1

BORING LOG: OD-JS-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/29/2008 10:03 AM
FINISH DATE/TIME: 07/29/2008 10:32 AM

LATITUDE (NAVD27): 954291.134
LONGITUDE (NAVD 27): 318322.251

TOP OF GROUND ELEVATION: 3604.85 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

REPORT TUCSON-ENVIRONMENTAL | PROJECT: FMI SIERRITA VRP-PHASE 1 | TASK 17: PHASE 1 REPORT PREVIOUS APPENDICES APPENDIX A - SOIL BORING LOGS | FMI SIERRITA VRP BORING LOGS | GP-184-RKURS TUCSON V4.1.GLB | PRINTED 10/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		OD-JS-02-0-1	SW-SM		Silty sand, fine to medium grained, dark yellowish brown, well graded, dry.
		OD-JS-02-1-3	ML		Silt with sand, fine grained with fine sand, dark yellowish brown, wet.
5	3600	OD-JS-02-5-7	NONE		Granodiorite, moist at 5 ft. bgs. Refusal at 9' bgs.
10	3595				
15	3590				
20	3585				



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SHEET 1 of 1

BORING LOG: OD-JS-03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/27/2008 11:25 AM
FINISH DATE/TIME: 08/27/2008 11:45 AM

LATITUDE (NAVD27): 954326.777
LONGITUDE (NAVD 27): 318407.501

TOP OF GROUND ELEVATION: 3599.96 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		OD-JS-03-0-1			
		OD-JS-03-1-3 OD-JS-03-1-3 D	SM		
			NONE		
5	3595				Silty sand, fine grained with silt, yellowish brown, loose, wet, poorly sorted. Micaceous at 3' bgs.
10	3590				Granodiorite. Refusal at 4' bgs.
15	3585				
20	3580				



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SHEET 1 of 1

BORING LOG: OD-SD-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

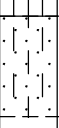
DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/28/2008 10:55 AM
FINISH DATE/TIME: 07/28/2008 10:58 AM

LATITUDE (NAVD27): 954102.483
LONGITUDE (NAVD 27): 318810.979

TOP OF GROUND ELEVATION: 3622.04 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		OD-SD-01-0-1.5	ML		Sandy Silt, sub-angular, dark yellowish brown (10yr 3/4), null odor, dry, loose, null cementation, null plasticity, fine gravel.
	3620	OD-SD-01-1.5-3	SM		Silty Sand, sub-angular, light gray (2.5yr 7/2), null odor, dry, loose, null cementation, null plasticity, fine gravel.
5					
	3615				
10					
	3610				
15					
	3605				
20					



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SHEET 1 of 1

BORING LOG: OD-SD-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/28/2008 11:06 AM
FINISH DATE/TIME: 07/28/2008 11:11 AM

LATITUDE (NAVD27): 954101.453
LONGITUDE (NAVD 27): 318590.905

TOP OF GROUND ELEVATION: 3614.55 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		OD-SD-02-0-1.5	ML		Silt with sand, sub-angular, dark yellowish brown (10yr 3/4), null odor, moist, loose, null cementation, null plasticity, fine gravel.
		OD-SD-02-1.5-3	SM		Silty Sand with gravel, sub-angular, light gray (2.5yr 7/2), null odor, dry, null cementation, null plasticity, fine gravel.
5	3610				
10	3605				
15	3600				
20	3595				



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SHEET 1 of 1

BORING LOG: OD-SD-03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/28/2008 12:55 PM
FINISH DATE/TIME: 07/28/2008 01:00 PM

LATITUDE (NAVD27): 954266.148
LONGITUDE (NAVD 27): 318575.559

TOP OF GROUND ELEVATION: 3609.41 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		OD-SD-03-0-1.5	SM		Silty Sand, sub-angular, dark yellowish brown (10yr 3/4), null odor, moist, null cementation, null plasticity, fine gravel.
		OD-SD-03-1.5-3			
5	3605				
10	3600				
15	3595				
20	3590				



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SHEET 1 of 1

BORING LOG: OD-SD-04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/28/2008 12:32 PM
FINISH DATE/TIME: 07/28/2008 12:34 PM

LATITUDE (NAVD27): 954143.108
LONGITUDE (NAVD 27): 318425.964

TOP OF GROUND ELEVATION: 3608.64 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		OD-SD-04-0-1.5	ML		Sandy Silt, sub-angular, brown (10yr 3/4), null odor, dry, loose, null cementation, null plasticity.
		OD-SD-04-1.5-3	SM		Silty Sand, sub-angular, dark brown (10yr 4/3), null odor, dry, loose, null cementation, null plasticity, medium sand.
	3605				
5					
	3600				
10					
	3595				
15					
	3590				
20					



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SHEET 1 of 1

BORING LOG: OD-SD-05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/29/2008 08:13 AM
FINISH DATE/TIME: 07/29/2008 08:16 AM

LATITUDE (NAVD27): 954501.784
LONGITUDE (NAVD 27): 318227.739

TOP OF GROUND ELEVATION: 3601.78 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3600	OD-SD-05-0-1.5	ML		Sandy Silt, sub-angular, dark yellowish brown (10yr 4/4), null odor, dry, strong HCL rxn, loose, null cementation, null plasticity, fine sand.
		OD-SD-05-1.5-3			
5	3595				
10	3590				
15	3585				
20					



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SHEET 1 of 1

BORING LOG: OD-SD-06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/29/2008 08:25 AM
FINISH DATE/TIME: 07/29/2008 08:45 AM

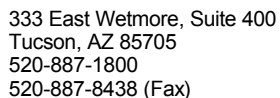
LATITUDE (NAVD27): 954584.987
LONGITUDE (NAVD 27): 318190.672

TOP OF GROUND ELEVATION: 3594.89 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		OD-SD-06-0-1.5	ML		Sandy silt, fine grained with fine gravels, dark yellowish brown, moist.
		OD-SD-06-1.5-3	SW-SM		2.0' Well graded sand with silt and gravel. Fine grained with fine gravels, light gray, dry.
5	3590				
10	3585				
15	3580				
20	3575				



DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/14/2008 10:54 AM
FINISH DATE/TIME: 07/14/2008 11:17 AM

TOP OF GROUND ELEVATION: 3644.49 A.S.L.

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

REPORT\TUCSON-ENVIRONMENTAL | PROJECT\FMI SIERRITA VRP PHASE 1\TASK 17 PHASE 1\REPORTS\01APPENDICES\APPENDIX A - SOIL BORING LOGS, GP\LIBRARY\TUCSON V4.1.GLB | PRINTED 6/09



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SHEET 1 of 1

BORING LOG: E-JS-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/14/2008 10:26 AM
FINISH DATE/TIME: 07/14/2008 10:44 AM

LATITUDE (NAVD27): 954344.079
LONGITUDE (NAVD 27): 319689.805

TOP OF GROUND ELEVATION: 3652.41 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		E-JS-02-0-1			
	3650	E-JS-02-1-3	SM		Silty Sand, sub-angular, sub-rounded, pale brown (10yr 6/3), dry, loose, null cementation, null plasticity, fine gravel.
			SM	3.0'	Silty Sand, sub-angular, sub-rounded, light gray (10yr 7/2), dry, loose, null cementation, null plasticity, fine gravel.
5			NONE	4.0'	Granodiorite, refusal at 5' bgs.
	3645				
10					
	3640				
15					
	3635				
20					



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SHEET 1 of 1

BORING LOG: EV-JS-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/14/2008 01:44 PM
FINISH DATE/TIME: 07/14/2008 02:13 PM

LATITUDE (NAVD27): 954058.142
LONGITUDE (NAVD 27): 319581.084

TOP OF GROUND ELEVATION: 3643.89 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EV-JS-01-0-1	SM		Silty Sand, sub-angular, sub-rounded, dark brown (7.5yr 3/4), moist, loose, null cementation, null plasticity, fine gravel.
		EV-JS-01-1-3	SM		Silty Sand, sub-angular, sub-rounded, brown (10yr 5/3), moist, loose, null cementation, null plasticity, fine gravel.
5	3640				
		EV-JS-01-5-7	SM		Silty Sand, sub-angular, sub-rounded, yellowish brown (10yr 5/4), null odor, moist, loose, null cementation, null plasticity, fine sand.
			NONE		Weathered Granodiorite
	3635		NONE		Granodiorite, refusal at 9' bgs.
10					
	3630				
15					
	3625				
20					



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SHEET 1 of 1

BORING LOG: EV-JS-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/14/2008 02:48 PM
FINISH DATE/TIME: 07/14/2008 03:05 PM

LATITUDE (NAVD27): 954291.052
LONGITUDE (NAVD 27): 319568.886

TOP OF GROUND ELEVATION: 3631.5 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3630	EV-JS-02-0-1	SM		Silty Sand, sub-angular, sub-rounded, dark yellowish brown (10yr 4/4), null odor, moist, loose, null cementation, null plasticity, fine gravel.
		EV-JS-02-1-3	GM		Silty Gravel with sand, sub-angular, sub-rounded gray, null odor, moist, loose, null cementation, null plasticity, fine gravel.
5			SM		Silty Sand with gravel, sub-angular, sub-rounded, light brownish gray (10yr 6/2), null odor, moist, loose, null cementation, null plasticity, fine gravel.
	3625	EV-JS-02-5-7	SM		Silty Sand with gravel, sub-angular, sub-rounded, brown (10yr 4/3), null odor, dry, loose, null cementation, null plasticity, fine gravel.
			NONE		Granodiorite, refusal at 8' bgs.
10					
	3620				
15					
	3615				
20					



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SHEET 1 of 1

BORING LOG: EM-C22

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/29/2008 12:15 PM
FINISH DATE/TIME: 07/29/2008 12:48 PM

LATITUDE (NAVD27): 951955.712
LONGITUDE (NAVD 27): 317373.796

TOP OF GROUND ELEVATION: 3681.63 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3680	EM-C22-0-1	SM		Silty Sand, sub-angular, yellowish brown (10yr 5/4), null odor, dry, HCL rxn, loose, null cementation, null plasticity, fine sand.
		EM-C22-1-3			
5		EM-C22-5-7	NONE		Granodiorite, refusal at 7' bgs.
	3675				
10					
	3670				
15					
	3665				
20					



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SHEET 1 of 1

BORING LOG: EM-E24

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/29/2008 01:18 PM
FINISH DATE/TIME: 07/29/2008 01:38 PM

LATITUDE (NAVD27): 952346.571
LONGITUDE (NAVD 27): 316948.16

TOP OF GROUND ELEVATION: 3667.85 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-E24-0-1			
		EM-E24-1-3			
3665			SM		
5					
		EM-E24-5-7			
3660			NONE		6.5'
					granodiorite, decomposed granite. Refusal at 8.5' bgs.
10					
3655					
15					
3650					
20					



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SHEET 1 of 1

BORING LOG: EM-G27

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

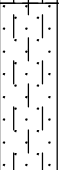
DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/07/2008 08:14 AM
FINISH DATE/TIME: 08/07/2008 08:26 AM

LATITUDE (NAVD27): 952834.674
LONGITUDE (NAVD 27): 316322.991

TOP OF GROUND ELEVATION: 3629.93 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-G27-0-1	ML		Silt with sand, sub-angular, dark yellowish brown (10yr 4/6), null odor, dry, null HCL, loose, slight cementation, null plasticity, fine sand.
		EM-G27-1-3	SM		Silty Sand, sub-angular, pale brown (10yr 6/3), null odor, dry, null HCL, loose, null cementation, null plasticity, medium sand.
			NONE		Granodiorite, refusal at 4' bgs.
5	3625				
10	3620				
15	3615				
20	3610				



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SHEET 1 of 1

BORING LOG: EM-H22

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/30/2008 09:34 AM
FINISH DATE/TIME: 07/30/2008 09:42 AM

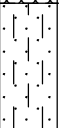
LATITUDE (NAVD27): 952903.698
LONGITUDE (NAVD 27): 317378.79

TOP OF GROUND ELEVATION: 3644.07 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

REPORT TUCSON-ENVIRONMENTAL | PROJECT: FMI SIERRITA VRP-PHASE 1 | TASK 17: PHASE 1 REPORT PREVIOUS APPENDICES APPENDIX A - SOIL BORING LOGS | FMI SIERRITA VRP BORING LOGS | GP-18494-RURS TUCSON V4.1.GLB | PRINTED: 8/9/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-H22-0-1	NONE		Gravel/ Fill
		EM-H22-1-3	SM		1.0' Silty Sand, sub-angular, brownish yellow (10yr 6/6), null odor, dry, loose, null cementation, null plasticity, fine gravel.
	3640		ML		3.0' Sandy Silt, sub-angular (5yr 3/4), null odor, moist, loose, null cementation, slightly plastic, fine sand.
5		EM-H22-5-7	NONE		5.5' Granodiorite, refusal at 8' bgs.
10	3635				
15	3630				
20	3625				



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SHEET 1 of 1

BORING LOG: EM-JS-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/01/2008 08:35 AM
FINISH DATE/TIME: 08/01/2008 08:56 AM

LATITUDE (NAVD27): 954015.31
LONGITUDE (NAVD 27): 316867.852

TOP OF GROUND ELEVATION: 3605.14 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3605	EM-JS-01-0-1			Silt with sand, sub-angular, yellowish brown, (10yr 5/6), null odor, dry, strong HCL rxn, loose, null cementation, null plasticity, fine sand.
		EM-JS-01-1-3	ML		
5	3600		NONE	4.0'	Granodiorite, refusal at 4' bgs.
10	3595				
15	3590				
20					



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SHEET 1 of 1

BORING LOG: EM-JS-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/01/2008 09:14 AM
FINISH DATE/TIME: 08/01/2008 09:27 AM

LATITUDE (NAVD27): 954053.347
LONGITUDE (NAVD 27): 316323.561

TOP OF GROUND ELEVATION: 3591.99 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-JS-02-0-1			
	3590	EM-JS-02-1-3	SM		Silty Sand with gravel, sub-angular, yellowish brown (10yr 5/6), null odor, dry, null HCL rxn, loose, null cementation, null plasticity, medium gravel.
			NONE	3.5'	Granodiorite, refusal at 4' bgs.
5					
	3585				
10					
	3580				
15					
	3575				
20					



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SHEET 1 of 1

BORING LOG: EM-JS-06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/13/2008 08:36 AM
FINISH DATE/TIME: 08/13/2008 09:06 AM

LATITUDE (NAVD27): 954180.044
LONGITUDE (NAVD 27): 316181.527

TOP OF GROUND ELEVATION: 3592.61 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-JS-06-0-1	ML		Silt with sand, fine grained, light yellowish brown, dry, loose.
	3590	EM-JS-06-1-3	SM		1.0' Silty sand with gravel, fine grained with fine gravel, light yellowish brown, dry, loose.
5		EM-JS-06-5-7	SM		4.0' Same, with 3" lenses of a light brown clay.
	3585				8.0'
10		EM-JS-06-10-11	NONE		A dark black, asphalt-looking material, vinyl-smelling, malleable. Refusal at 11 ft. bgs.
	3580				
15					
	3575				
20					



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SHEET 1 of 1

BORING LOG: EM-JS-07

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/13/2008 09:08 AM
FINISH DATE/TIME: 08/13/2008 09:30 AM

LATITUDE (NAVD27): 954125.923
LONGITUDE (NAVD 27): 316222.793

TOP OF GROUND ELEVATION: 3592.66 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-JS-07-0-1			Sandy silt with gravel, fine grained with fine gravels, brown, dry, loose.
	3590	EM-JS-07-1-3	ML		
5				5.0'	Same with clays and red staining, a black material coming in at 8'.
		EM-JS-07-5-7	ML		
	3585			8.0'	Black stained silt with sand, looks and feels like asphalt.
10		EM-JS-07-10-12	NONE		
	3580				
15		EM-JS-07-15-16	NONE	15.0'	Granodiorite refusal at 16' bgs.
	3575				
20					



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SHEET 1 of 1

BORING LOG: EM-JS-08

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/12/2008 01:20 PM
FINISH DATE/TIME: 08/12/2008 01:56 PM

LATITUDE (NAVD27): 954185.473
LONGITUDE (NAVD 27): 316264.171

TOP OF GROUND ELEVATION: 3591.95 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-JS-08-0-1	SM		Silty sand with gravel, fine sand with fine-med gravel, very pale brown, dry, loose.
	3590	EM-JS-08-1-3 EM-JS-08-1-3 D	ML		Silt with sand, fine grained, very pale brown, dry, loose.
5		EM-JS-08-5-7	NONE		A black, hydrocarbon-smelling material, very wet, gravelly sludge with metallic chips, distinct smell. No refusal at 15' bgs, but discontinued borehole.
10		EM-JS-08-10-12			
	3585				
	3580				
15					
	3575				
20					



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SHEET 1 of 1

BORING LOG: EM-K24

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 07/31/2008 01:44 PM
FINISH DATE/TIME: 07/31/2008 02:08 PM

LATITUDE (NAVD27): 953500.182
LONGITUDE (NAVD 27): 316967.602

TOP OF GROUND ELEVATION: 3622.23 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-K24-0-1	SM		Silty Sand with fine gravel, sub-angular, yellowish brown (10yr 5/6), null odor, dry, loose, null cementation, null plasticity, fine gravel.
	3620	EM-K24-1-3	ML		Sandy Silt/Silt with sand, sub-angular, yellowish brown (10yr 5/6), null odor, dry, strong HCL rxn, loose, null cementation, null plasticity.
5		EM-K24-5-7	ML		Silt with sand, sub-angular, yellowish brown (10yr 5/6), null odor, dry, strong HCL rxn, loose, null cementation, null plasticity.
	3615		ML		
			NONE		Granodiorite, refusal at 9' bgs.
10					
	3610				
15					
	3605				
20					



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SHEET 1 of 1

BORING LOG: EM-N29

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/06/2008 01:06 PM
FINISH DATE/TIME: 08/06/2008 01:23 PM

LATITUDE (NAVD27): 954120.617
LONGITUDE (NAVD 27): 315941.564

TOP OF GROUND ELEVATION: 3601.08 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3600	EM-N29-0-1			Sandy Silt with gravel, sub-angular, brown (10yr 6/3), null odor, dry, null HCL, loose, null cementation, null plasticity, medium gravel.
		EM-N29-1-3	SM		
			NONE	3.5'	Granodiorite, refusal at 4' bgs.
5					
	3595				
10					
	3590				
15					
	3585				
20					



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SHEET 1 of 1

BORING LOG: EM-P24

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/07/2008 10:17 AM
FINISH DATE/TIME: 08/07/2008 11:07 AM

LATITUDE (NAVD27): 954408.811
LONGITUDE (NAVD 27): 316937.925

TOP OF GROUND ELEVATION: 3582.91 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-P24-0-1			Silt with sand, sub-angular, dark yellowish brown (10yr 3/4), null odor, dry, null HCL, loose, null cementation, null plasticity, fine sand.
	3580	EM-P24-1-3	ML		
5			NONE	4.0'	Granodiorite
				5.0'	Sandy Silt with gravel, sub-angular, pale brown, null odor, dry, null HCL, loose, null cementation, null plasticity, fine gravel.
		EM-P24-5-7	ML		
	3575		ML	7.0'	Silt with sand, fine grained, brown, dry, loose.
10			NONE	10.0'	Granodiorite, refusal at 12' bgs.
	3570				
	3565				
15					
20					



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SHEET 1 of 1

BORING LOG: EM-U25

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/06/2008 10:56 AM
FINISH DATE/TIME: 08/06/2008 11:12 AM

LATITUDE (NAVD27): 955504.28
LONGITUDE (NAVD 27): 316765.676

TOP OF GROUND ELEVATION: 3564.36 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		EM-U24-0-1			Silt with sand, sub-angular, brown (10yr 4/4), null odor, dry, HCL rxn, loose, null cementation, null plasticity, fine sand.
		EM-U24-1-3	ML		
5	3560				
		EM-U24-5-5.5	NONE		Granodiorite, refusal at 5' bgs.
10	3555				
15	3550				
20	3545				



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SHEET 1 of 1

BORING LOG: EM-X26

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/06/2008 09:58 AM
FINISH DATE/TIME: 08/06/2008 10:35 AM

LATITUDE (NAVD27): 956129.514
LONGITUDE (NAVD 27): 316605.774

TOP OF GROUND ELEVATION: 3540.76 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3540	EM-X26-0-1	ML		Silt with Sand, sub-angular, brown (10yr 4/3), null odor, dry, null HCL, loose, null cementation, null plasticity, medium sand.
		EM-X26-1-3			
5	3535	EM-X26-5-7			
			NONE	7.5'	Granodiorite, refusal at 8' bgs.
10	3530				
15	3525				
20					



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SHEET 1 of 1

BORING LOG: C-JS-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/01/2008 12:34 PM
FINISH DATE/TIME: 08/01/2008 12:48 PM

LATITUDE (NAVD27): 954724.102
LONGITUDE (NAVD 27): 316570.991

TOP OF GROUND ELEVATION: 3574.79 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		C-JS-01-0-1	ML		Silt with Sand, sub-angular, dark yellowish brown (10yr 4/6), null odor, dry, strong HCL rxn, loose, null cementation, null plasticity, fine sand.
		C-JS-01-1-3	ML		Silt with Sand, sub-angular, dark yellowish brown with gray staining(10yr 5/1), slight odor, dry, strong HCL rxn, loose, null cementation, null plasticity, fine sand.
5	3570		NONE		Granodiorite, refusal at 4' bgs.
10	3565				
15	3560				
20	3555				



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SHEET 1 of 1

BORING LOG: C-JS-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/01/2008 12:53 PM
FINISH DATE/TIME: 08/01/2008 01:12 PM

LATITUDE (NAVD27): 954719.535
LONGITUDE (NAVD 27): 316372.777

TOP OF GROUND ELEVATION: 3569.69 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		C-JS-02-0-1	ML		Silt with sand, sub-angular, brown (10yr 5/3), null odor, dry, null HCL, loose, null cementation, null plasticity, fine sand.
		C-JS-02-1-3			
5	3565		SM		Silty Sand, sub-angular, brown (10yr 5/3), null odor, moist, null HCL, loose, null cementation, null plasticity, fine sand.
		C-JS-02-5-7			
			NONE		Granodiorite, refusal at 7' bgs.
10	3560				
15	3555				
20	3550				



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SHEET 1 of 1

BORING LOG: C-JS-03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Rick Smith
START DATE/TIME: 08/04/2008 10:20 AM
FINISH DATE/TIME: 08/04/2008 11:03 AM

LATITUDE (NAVD27): 954933.256
LONGITUDE (NAVD 27): 316394.117

TOP OF GROUND ELEVATION: 3567.47 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		C-JS-03-0-1	ML		Sandy Silt with gravel, sub-angular, dark brown (10yr 3/3), null odor, moist, null HCL rxn, loose, null cementation, null plasticity, fine gravel.
	3565	C-JS-03-1-3			
5			ML		2.0' Sandy Silt, sub-angular, yellowish brown (10yr 5/4), null odor, moist, null HCL rxn, loose, null cementation, null plasticity, fine sand.
	3560				
10		C-JS-03-10-12	ML		9.0' Sandy Silt, sub-angular, black (5yr 2.5/1), null odor, wet, null HCL rxn, loose, null cementation, null plasticity, fine sand.
	3555				
15		C-JS-03-15-17	SP-SC		14.0' Sand with clay, sub-angular, black (5yr 2.5/1), null odor, very wet, null HCL rxn, loose, null cementation, null plasticity, fine gravel.
	3550		NONE		17.0' Granodiorite, refusal at 17' bgs.
20					



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SHEET 1 of 1

BORING LOG: C-JS-04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/05/2008 09:20 AM
FINISH DATE/TIME: 08/05/2008 10:33 AM

LATITUDE (NAVD27): 955103.69
LONGITUDE (NAVD 27): 316383.771

TOP OF GROUND ELEVATION: 3566.72 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		C-JS-04-0-1			Sandy Silt, sub-angular, yellowish brown (10yr 5/6), null odor, dry, loose.
	3565	C-JS-04-1-3	ML		
				2.5'	Granodiorite Layer
				3.5'	
5			SM		Silty Sand, sub-angular, gray, null odor, moist, strong HCL, loose, null cementation, null plasticity.
				5.0'	Granodiorite
		C-JS-04-5-7			
	3560				
				7.5'	Poorly Graded Sand with gravel, fine to medium sand with fine gravels, brownish gray, saturated. Strong odors.
10			SP		
		C-JS-04-10-12			
	3555				
				12.0'	Well Graded Sand, sub-angular, brown (10yr 5/3), null odor, wet, null HCL rxn, loose, null cementation, null plasticity.
			SW-SM		
15		C-JS-04-15-16			
				16.0'	Granodiorite, refusal at 16' bgs.
	3550		NONE		
20					



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SHEET 1 of 1

BORING LOG: C-JS-05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

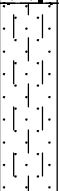
DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/05/2008 11:05 AM
FINISH DATE/TIME: 08/05/2008 11:31 AM

LATITUDE (NAVD27): 955129.656
LONGITUDE (NAVD 27): 316217.958

TOP OF GROUND ELEVATION: 3565.07 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3560	C-JS-05-0-1	SW		Sandy Gravel, sub-angular, brown (10yr 5/3), null odor, moist, HCL rxn, loose, null plasticity, null cementation, medium gravel.
		C-JS-05-1-3	SM		Silty Sand with gravel, sub-angular, light gray (10yr 7/2), null odor, dry, null HCL rxn, loose, null plasticity, null cementation, fine gravel.
			NONE		Granodiorite, refusal at 5' bgs.
10	3555				
15	3550				
20					



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SHEET 1 of 1

BORING LOG: CS-JS-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Rick Smith
START DATE/TIME: 08/04/2008 11:33 AM
FINISH DATE/TIME: 08/04/2008 01:42 PM

LATITUDE (NAVD27): 955329.204
LONGITUDE (NAVD 27): 316581.075

TOP OF GROUND ELEVATION: 3566.94 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CS-JS-01-0-1	ML		Sandy Siltwith Andesite gravels, sub-angular, yellowish brown (10yr 4/4), null odor, dry, null HCL rxn, loose, null cementation, null plasticity, medium gravel.
	3565	CS-JS-01-1-3			Granodiorite, decomposed with some sandy silt.
5					
		CS-JS-01-5-7			C-pond spoils, black, silty, hydrocarbon odors, very wet.
	3560				
10					
		CS-JS-01-10-12	ML		Sandy Silt, sub-angular, yellowish brown (10yr 5/4), null odor, moist, null HCL rxn, loose, null cementation, null plasticity, medium sand.
	3555				
			ML		Sandy Silt, light brown, wet, loose.
			NONE		Granodiorite, refusal at 14' bgs.
15					
	3550				
20					



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SHEET 1 of 1

BORING LOG: CS-JS-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Rick Smith
START DATE/TIME: 08/04/2008 02:03 PM
FINISH DATE/TIME: 08/04/2008 02:33 PM

LATITUDE (NAVD27): 955503.994
LONGITUDE (NAVD 27): 316374.407

TOP OF GROUND ELEVATION: 3563.48 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CS-JS-02-0-1			Silty Sand, sub-angular, brown (10yr 5/3), null odor, dry, null HCL, loose, null cementation, null plasticity, fine gravel.
		CS-JS-02-1-3	SM		
5	3560				4.0'
			SM		Very Fine Sand, sub-angular, very pale brown (10yr 7/3), null odor, dry, strong HCL, loose, light cementation, null plasticity, fine sand.
		CS-JS-02-5-7	NONE		5.5'
					Granodiorite
					7.0'
	3555		SM		Very Fine Sand, sub-angular, very pale brown (10yr 7/3), null odor, dry, strong HCL, loose, light cementation, null plasticity, fine sand.
10					9.0'
		CS-JS-02-10-11	NONE		Granodiorite, refusal at 11' bgs.
	3550				
15					
	3545				
20					



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SHEET 1 of 1

BORING LOG: CS-JS-03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/05/2008 08:10 AM
FINISH DATE/TIME: 08/05/2008 08:43 AM

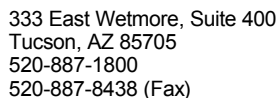
LATITUDE (NAVD27): 955565.4
LONGITUDE (NAVD 27): 316187.586

TOP OF GROUND ELEVATION: 3560.01 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CS-JS-03-0-1	ML		Sandy Silt, sub-angular, dark brown (10yr 3/3), null odor, dry, HCL rxn, loose, null cementation, null plasticity, fine sand.
		CS-JS-03-1-3			
				3.0'	Granodiorite
5	3555		ML	4.0'	Sandy Silt, sub-angular, dark brown (10yr 3/3), null odor, dry, HCL rxn, loose, null cementation, null plasticity, fine sand. with Granodiorite.
		CS-JS-03-5-7			
				9.0'	Sandy Silt with gravel, sub-angular, yellowish brown (10yr 5/4), null odor, dry, strong HCL rxn, loose, null cementation, null plasticity, fine gravel.
10	3550		ML		
		CS-JS-03-10-12			
				14.0'	Sandy Clay, sub-angular, (2.5yr 3/6), null odor, dry, strong HCL rxn, compact, cemented, plastic, fine sand. Refusal at 15' bgs.
15	3545		CL		
20					



DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/06/2008 08:58 AM
FINISH DATE/TIME: 08/06/2008 09:18 AM

TOP OF GROUND ELEVATION: 3543.23 A.S.L.

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CS-JS-04-0-1	ML		Silt with sand, sub-angular, dark yellowish brown (10yr 3/4), null odor, dry, null HCL rxn, loose, null cementation, null plasticity, fine sand.
		CS-JS-04-1-3	SM		Sandy Silt, sub-angular, yellowish brown (10yr 5/8), null odor, dry, null HCL rxn, loose, null cementation, null plasticity, fine sand.
5	3540		NONE		Granodiorite, refusal at 7' bgs.
	3535				
10					
	3530				
15					
	3525				
20					



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SHEET 1 of 1

BORING LOG: CS-JS-05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/27/2008 01:22 PM
FINISH DATE/TIME: 08/27/2008 01:40 PM

LATITUDE (NAVD27): 955538.433
LONGITUDE (NAVD 27): 316608.509

TOP OF GROUND ELEVATION: 3562.19 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CS-JS-05-0-1	SM		Silty sand, fine grained, light brown, loose, dry.
	3560	CS-JS-05-1-3 CS-JS-05-1-3 D	NONE	1.0'	Decomposed granite/clay. Granodiorite refusal at 4' bgs.
5					
	3555				
10					
	3550				
15					
	3545				
20					



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SHEET 1 of 1

BORING LOG: CS-JS-06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/27/2008 01:43 PM
FINISH DATE/TIME: 08/27/2008 01:57 PM

LATITUDE (NAVD27): 955643.557
LONGITUDE (NAVD 27): 316471.076

TOP OF GROUND ELEVATION: 3556.72 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		CS-JS-06-0-1	SM		Silty sand, fine grained, yellowish brown, dry, loose.
	3555	CS-JS-06-1-3	NONE	1.0'	Decomposed granite. Refusal at 3' bgs.
5					
	3550				
10					
	3545				
15					
	3540				
20					



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SHEET 1 of 1

BORING LOG: RA-JS-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/07/2008 12:35 PM
FINISH DATE/TIME: 08/07/2008 12:57 PM

LATITUDE (NAVD27): 953103.344
LONGITUDE (NAVD 27): 316563.577

TOP OF GROUND ELEVATION: 3619.32 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		RA-JS-01-0-1			Silty Clay, sub-angular, yellowish brown (10yr 5/6), null odor, slightly moist, HCL rxn, loose, null cementation, plastic, fines.
		RA-JS-01-1-3	CL		
5	3615			4.0'	
		RA-JS-01-5-7	SM		Silty Sand, sub-angular, pale yellow (10yr 4/3), null odor, moist, null HCL, loose, null cementation, null plasticity, fine sand.
				7.0'	
			NONE		Granodiorite with black staining, refusal at 8' bgs.
10	3610				
15	3605				
20	3600				



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SHEET 1 of 1

BORING LOG: RA-JS-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: NA
DRILLER: NA
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/11/2008 10:25 AM
FINISH DATE/TIME: 08/11/2008 12:50 PM

LATITUDE (NAVD27): 953294.899
LONGITUDE (NAVD 27): 316577.929

TOP OF GROUND ELEVATION: 3611.45 A.S.L.

COMMENTS:

RIG TYPE: Hand Auger
DRILLING METHOD: Hand Auger
SAMPLING METHOD: NA

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3610	RA-JS-02-0-1D RA-JS-02-0-1 RA-JS-02-0-1MS RA-JS-02-0-1MSD RA-JS-02-1-3 RA-JS-02-1-3D RA-JS-02-1-3MS RA-JS-02-1-33MSD	SM		Silty Sand, sub-angular, pale yellow (2.5yr 7/4), null odor, dry, null HCL, loose, null cementation, null plasticity, fine sand. 1.0' dark black material with hydrocarbon vapors and a very distinct goeey consistency. 3.0' transitioning to a sandy material. Hand auger not able to push further.
5	3605				
10	3600				
15	3595				
20					



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SHEET 1 of 1

BORING LOG: RA-JS-03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/07/2008 09:08 AM
FINISH DATE/TIME: 08/07/2008 09:17 AM

LATITUDE (NAVD27): 953418.797
LONGITUDE (NAVD 27): 316502.988

TOP OF GROUND ELEVATION: 3602.07 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		RA-JS-03-0-1	SM		Silty Sand, sub-angular, yellowish brown (10yr 5/4), null odor, wet, null HCL, loose, null cementation, null plasticity, medium sand.
	3600	RA-JS-03-1-3	NONE		Granodiorite, refusal at 4' bgs.
5					
	3595				
10					
	3590				
15					
	3585				
20					



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SHEET 1 of 1

BORING LOG: RA-JS-04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/07/2008 08:37 AM
FINISH DATE/TIME: 08/07/2008 08:50 AM

LATITUDE (NAVD27): 953311.478
LONGITUDE (NAVD 27): 316383.748

TOP OF GROUND ELEVATION: 3610.54 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3610	RA-JS-04-0-1	NONE		Decomposed granite with silty sand, loose, dry. Refusal at 3' bgs.
		RA-JS-04-1-2.5			
5	3605				
10	3600				
15	3595				
20					



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SHEET 1 of 1

BORING LOG: RA-JS-05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

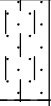
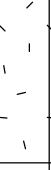
DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/07/2008 09:34 AM
FINISH DATE/TIME: 08/07/2008 09:46 AM

LATITUDE (NAVD27): 953511.362
LONGITUDE (NAVD 27): 316403.533

TOP OF GROUND ELEVATION: 3600.11 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		RA-JS-05-0-1	SM		Silty Sand, sub-angular, yellowish brown (10yr 5/6), null odor, wet, null HCL, loose, null cementation, null plasticity, medium gravel.
		RA-JS-05-1-3	NONE		Granodiorite with orange stains, refusal at 4' bgs. (10yr 6/8)
5	3595				
10	3590				
15	3585				
20					



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SHEET 1 of 1

BORING LOG: RA-SD-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: NA
DRILLER: NA
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/11/2008 09:50 AM
FINISH DATE/TIME: 08/11/2008 10:05 AM

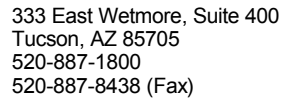
LATITUDE (NAVD27): 953222.773
LONGITUDE (NAVD 27): 316605.707

TOP OF GROUND ELEVATION: 3612.94 A.S.L.

COMMENTS:

RIG TYPE: Hand Auger
DRILLING METHOD: Hand Auger
SAMPLING METHOD: NA

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		RA-SD-01-0-1.5D RA-SD-01-0-1.5 RA-SD-01-0-1.5MS RA-SD-01-0-1.5MSD	ML		Silt with sand, sub-angular, brown (10yr 5/3), null odor, moist, null HCL, loose, null cementation, null plasticity, fine sand.
	3610	RA-SD-01-1.5-3 RA-SD-01-1.5-3D RA-SD-01-1.5-3MS RA-SD-01-1.5-3MSD	CH		Sandy Clay, sub-angular, light brown (10yr 6/4), null odor, wet, null HCL, loose, null cementation, slightly plasticity, fine sand. Black staining in the clay.
5					
	3605				
10					
	3600				
15					
	3595				
20					





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SHEET 1 of 1

BORING LOG: RP-JS-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/12/2008 09:21 AM
FINISH DATE/TIME: 08/12/2008 10:26 AM

LATITUDE (NAVD27): 961468.058
LONGITUDE (NAVD 27): 316246.066

TOP OF GROUND ELEVATION: 3508.39 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		RP-JS-01-0-1	ML		Silt with sand and gravel, fine grained with fine gravels, yellowish brown, dry, loose.
		RP-JS-01-1-3 RP-JS-01-1-3 D	ML		Silt with sand, fine grained, yellowish brown, dry, loose.
5	3505		SW		Sand with gravel, well graded, brown, dry, loose.
		RP-JS-01-5-7			Silt with sand, fine grained, yellowish brown, dry, loose.
10	3500		ML		
		RP-JS-01-10-12			Silt with sand, fine silt with well sorted sand, gray, wet, loose.
15	3495				
		RP-JS-01-15-17	ML		
20	3490				



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SHEET 1 of 1

BORING LOG: RP-JS-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/12/2008 08:11 AM
FINISH DATE/TIME: 08/12/2008 09:09 AM

LATITUDE (NAVD27): 961549.034
LONGITUDE (NAVD 27): 316078.757

TOP OF GROUND ELEVATION: 3508.6 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		RP-JS-02-0-1	SM		Silty sand with gravel, fine grained silt with fine grained sand, yellowish brown, dry, loose.
		RP-JS-02-1-3 RP-JS-02-1-3 D			Silty sand, fine grained, olive yellow, dry, loose.
5	3505		SM		
		RP-JS-02-5-7			
					Same, with moisture.
10	3500		SM		
		RP-JS-02-10-12			Silt with sand, fine silt with fine well-sorted sand, gray, dry, loose.
15	3495				
		RP-JS-02-15-17	ML		
20	3490				



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SHEET 1 of 1

BORING LOG: TW-2008-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/21/2008 01:15 PM
FINISH DATE/TIME: 08/21/2008 01:36 PM

LATITUDE (NAVD27): 947091.62
LONGITUDE (NAVD 27): 309143.77

TOP OF GROUND ELEVATION: 3725.64 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3725				
5			SM		
	3720				
				6.0'	
			CL		Decomposed granite with some gravels and sand, gray, powdery. Refusal at 8' bgs.
10					
	3715				
15					
	3710				
20					



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SHEET 1 of 1

BORING LOG: TW-2008-03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/26/2008 10:38 AM
FINISH DATE/TIME: 08/26/2008 11:20 AM

LATITUDE (NAVD27): 947391.215
LONGITUDE (NAVD 27): 309557.538

TOP OF GROUND ELEVATION: 3679.36 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
			SM		Silty sand, fine grained, dark yellowish brown, dry, loose.
				1.0'	
			SM		Silty sand with gravel, fine grained with fine gravels, dark yellowish brown, dry, loose.
				4.0'	
5	3675		SM		Silty sand, fine grained, dark yellowish brown, dry, loose.
				6.0'	
			SM		Silty sand with gravel, fine grained with fine gravels, dark yellowish brown, dry, loose, multi colored staining.
10	3670			12.0'	
					Same to 16' bgs. Moisture present.
15	3665		SM		
				18.0'	
			SM		Black-stained silt with a gray, weathered granit bedrock. Bedrock at 20' bgs.
20	3660				



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SHEET 1 of 1

BORING LOG: TW-2008-04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Rick Smith
START DATE/TIME: 08/22/2008 09:15 AM
FINISH DATE/TIME: 08/22/2008 10:22 AM

LATITUDE (NAVD27): 947557.522
LONGITUDE (NAVD 27): 309239.672

TOP OF GROUND ELEVATION: 3666.11 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3665				Silty sand, fine grained, dark yellowish brown, moist, loose, trace fine gravels at 3.5' bgs.
5			SM		
	3660				
				8.0'	Silty sand with gravel, fine gravel, dark yellowish brown, moisture, loose.
10			SM		
	3655				
			ML	12.0'	Silt with clay.
			SM	12.3'	
			ML	12.5'	Silty sand with gravel.
				13.0'	Silt with clay, fine sand, dark gray, moist, med. stiff, trace gravels.
			GP		Gravel, moist rock, texture, aphanitic, green-gray, some staining, pyrite minerals visible.
15					
	3650		NONE	16.0'	Granodiorite, refusal at 16' bgs.
20					



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BORING LOG: TW-2008-05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/25/2008 08:50 AM
FINISH DATE/TIME: 08/25/2008 09:10 AM

LATITUDE (NAVD27): 948456.636
LONGITUDE (NAVD 27): 308332.172

TOP OF GROUND ELEVATION: 3635.27 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3635				
5	3630		SM		Silty sand with gravel, fine grained with fine gravels, brown, dry, loose.
				7.0'	
					Boulder, rock, gray, chalky.
				9.0'	
10	3625		SM		Silty sand with gravel, fine grained with gravels, brown, dry, loose.
				10.0'	
			NONE		Decomposed granite, refusal at 12' bgs.
15	3620				
20					



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BORING LOG: TW-2008-06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/26/2008 08:20 AM
FINISH DATE/TIME: 08/26/2008 08:50 AM

LATITUDE (NAVD27):
LONGITUDE (NAVD 27):

TOP OF GROUND ELEVATION: A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
			SC		Clayey sand, fine grained, dark yellowish brown, wet, loose. Chalk like granite refusal at 3' bgs.
			NONE		Granodiorite, refusal at 3' bgs.
5					
10					
15					
20					



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SHEET 1 of 1

BORING LOG: TW-2008-07

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/25/2008 10:30 AM
FINISH DATE/TIME: 08/25/2008 11:30 AM

LATITUDE (NAVD27): 948878.716
LONGITUDE (NAVD 27): 310342.294

TOP OF GROUND ELEVATION: 3701.28 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3700		SM		Silty sand, fine grained, dark yellowish brown, loose, dry, well sorted.
				2.0'	
			SM		Same, with water at 2' bgs.
5					
	3695			6.0'	
			NONE		Bedrock granite refusal.
10					
	3690				
15					
	3685				
20					



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SHEET 1 of 1

BORING LOG: TW-2008-08

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/19/2008 10:13 AM
FINISH DATE/TIME: 08/19/2008 11:10 AM

LATITUDE (NAVD27): 952645.044
LONGITUDE (NAVD 27): 315381.887

TOP OF GROUND ELEVATION: 3626.01 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3625		SM		Silty sand, fine grained, light olive gray, dry, loose.
				1.0'	Silt with sand, fine grained, brown, dry, loose.
5			ML		
	3620			6.0'	Silty sand with gravel, fine grained with fine gravel, brown, wet, loose.
					Hydrocarbon smell and refusal at 14' bgs.
10			SM		
	3615				
15					
	3610				
20					



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SHEET 1 of 1

BORING LOG: TW-2008-09

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/19/2008 08:30 AM
FINISH DATE/TIME: 08/19/2008 09:50 AM

LATITUDE (NAVD27): 952729.498
LONGITUDE (NAVD 27): 315182.102

TOP OF GROUND ELEVATION: 3612.44 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
					Silt with sand and gravel, fine grained with fine gravels, brown, dry, loose.
	3610		ML		2.0'
					Same, wet at 3' bgs. Copper sheen on geoprobe downhole equipment.
			ML		4.0'
5			SM		Silty sand with gravel, fine to medium sand with fine gravels, pale brown, silt, poorly sorted, wet.
					6.0'
	3605		NONE		A dark gray granite-looking bedrock, consolidated, cemented. Refusal at 8'bgs granite.
10					
	3600				
15					
	3595				
20					



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SHEET 1 of 1

BORING LOG: TW-2008-10

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/18/2008 10:40 AM
FINISH DATE/TIME: 08/18/2008 02:10 PM

LATITUDE (NAVD27): 953238.281
LONGITUDE (NAVD 27): 315413.441

TOP OF GROUND ELEVATION: 3605.57 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3605		ML		Silt with sand, fine grained with fine sand, yellowish brown, loose, dry.
				2.0'	
					Lean clay, reddish brown, maleable, very wet, organic odor.
5	3600		CL		
10	3595		NONE		Gravel, medium grained, gray, wet, loose. Decomposed granite refusal at 13' bgs.
15	3590				
20					



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SHEET 1 of 1

BORING LOG: TW-2008-11

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/18/2008 08:30 AM
FINISH DATE/TIME: 08/18/2008 10:00 AM

LATITUDE (NAVD27): 954394.206
LONGITUDE (NAVD 27): 315606.195

TOP OF GROUND ELEVATION: 3565.11 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
			ML		Silt with sand, fine grained with fine sand, yellowish brown, loose, dry.
				1.0'	
			ML		Silt with sand and gravel, fine grained with fine to medium gravels, yellowish brown, loose, dry.
5	3560			6.0'	
			ML		Same, very wet at 7' bgs.
				8.0'	
			SM		Silty sand with gravel, fine sand with fine to medium gravel, yellowish brown, loose, dry.
10	3555			10.0'	
			NONE		Decomposed granite turning into clay, fine grained, gray, loose, wet. Refusal at 12' bgs decomposed granite.
15	3550				
20					



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SHEET 1 of 1

BORING LOG: TW-2008-12

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/14/2008 01:30 PM
FINISH DATE/TIME: 08/14/2008 02:50 PM

LATITUDE (NAVD27): 956104.553
LONGITUDE (NAVD 27): 315756.702

TOP OF GROUND ELEVATION: 3531.63 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3530		SM		Silty sand with gravel, fine grained with fine to medium gravels, light gray, dry, loose.
5					
	3525		NONE		A gray solid rock, harder to push, micas, feldspars. Refusal at 9' bgs.
10					
	3520				
15					
	3515				
20					



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SHEET 1 of 1

BORING LOG: TW-2008-13

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/15/2008 08:11 AM
FINISH DATE/TIME: 08/15/2008 08:53 AM

LATITUDE (NAVD27): 955309.729
LONGITUDE (NAVD 27): 316288.483

TOP OF GROUND ELEVATION: 3567.06 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3565		ML		Silt with sand and gravel, fine grained with fine gravels, yellowish brown, dry, loose.
				1.0'	Same with granodiorite gravels, moist.
5			ML		
	3560				
				7.5'	Gravel, gray, fine to medium grained, moist.
10			GM		
				10.0'	A very wet, very organic smelling dark gray material. Silty clay consistency, strong odor.
	3555				
15			ML		
	3550				
20					



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SHEET 1 of 1

BORING LOG: TW-2008-14

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh, Armando Jimenez
START DATE/TIME: 08/15/2008 01:30 PM
FINISH DATE/TIME: 08/15/2008 02:20 PM

LATITUDE (NAVD27): 954460.323
LONGITUDE (NAVD 27): 316121.109

TOP OF GROUND ELEVATION: 3575.99 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3575		SM		Silty sand with gravel, fine grained, yellowish brown, moist, loose.
5			NONE		Granodiorite refusal at 5.5' bgs.
	3570				
10					
	3565				
15					
	3560				
20					



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SHEET 1 of 1

BORING LOG: TW-2008-15

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

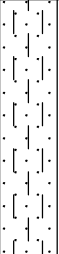
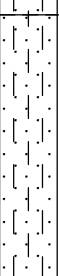
DRILLING CONTRACTOR: Johnson Envtl. Technologies
DRILLER: Scott Johnson
LOGGED BY: Kevin Walsh
START DATE/TIME: 08/28/2008 08:05 AM
FINISH DATE/TIME: 08/28/2008 08:43 AM

LATITUDE (NAVD27): 952211.128
LONGITUDE (NAVD 27): 317265.272

TOP OF GROUND ELEVATION: 3665.14 A.S.L.

COMMENTS:

RIG TYPE: Geoprobe
DRILLING METHOD: Direct Push Technology (DPT)
SAMPLING METHOD: Macro Core with PVC Sleeve

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3665				
			SM		Silty sand with gravel, fine grained with fine gravel, light yellowish brown, dry, loose, green staining.
5	3660		SM		Same, decomposed granite gravels, moist.
			NONE		Very wet silty sand, dark grayish brown, fine grained, wet, loose. Refusal at 9' bgs, very hard granite material.
10	3655				
15	3650				
20					



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SHEET 1 of 1

BORING LOG: MW-2008-01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 07/15/2008 10:40 AM
FINISH DATE/TIME: 07/17/2008 09:30 AM

LATITUDE (NAVD27): 953432.425
LONGITUDE (NAVD 27): 320773.644

TOP OF GROUND ELEVATION: 3714.29 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3710	0-5			Ruby Star Granodiorite, reddish gray (5yr 5/2) and brown (5yr 5/4), equigranular quartz, potassium feldspar, plagioclase, hornblende.
10	3705	5-10			
15	3700	10-15			
20	3695	15-20			Ruby Star Granodiorite, gray (10yr 5/1) with brown iron oxide (10yr 5/3) and yellow sulfides (10yr 7/6), equigranular quartz, potassium feldspar, plagioclase, hornblende, clay layer at 28 ft.
25	3690	20-25			
30	3685	25-30			
35	3680	30-35			Ruby Star Granodiorite, light gray (2.5y 7/1), hornblende and biotite, abundant brownish yellow (10yr 6/8) iron oxide and sulfide staining.
40	3675	35-40			
45	3670	40-45			
50	3665	45-50			
55	3660	50-55			
60	3655	55-60			Ruby Star Granodiorite, light gray (10yr 7/1), with 10% yellowish red (5yr 6/6) staining.
65	3650	60-65			Ruby Star Granodiorite, light gray (2.5y 7/1), with 5% yellowish red (7.5yr 6/6) staining.
70	3645	65-70			Ruby Star Granodiorite, light gray (2.5y 7/1), with 5% yellowish red (7.5yr 6/6) staining.
75	3640	70-75			
80	3635	75-80			Ruby Star Granodiorite, gray (5y 5/1), with 30% yellowish red (7.5yr 6/6) staining.
85	3630	80-85			Ruby Star Granodiorite, white (2.5y 2/8) matrix, with 85% yellow to yellowish brown (10yr 7/6 to 5/6), coarse texture up to 3/4 inch, some pyrite.
90	3625				Ruby Star Granodiorite, gray (2.5y 6/1), with 10% brown (7.5yr 5/4) to yellow (10yr 7/6) staining.
95	3620				
100	3615				



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SHEET 1 of 1

BORING LOG: MW-2008-02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 07/18/2008 10:20 AM
FINISH DATE/TIME: 07/23/2008 01:20 PM

LATITUDE (NAVD27): 954402.759
LONGITUDE (NAVD 27): 320301.259

TOP OF GROUND ELEVATION: 3666.41 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3665	0-5			Ruby Star Granodiorite, light gray (2.5y 7/1), equigranular quartz, potassium feldspar, plagioclase, hornblende, 5-20% yellowish red (5yr 5/6) staining (iron oxide), fine matrix.
10	3660	5-10			
15	3655	10-15			
20	3650	15-20			
25	3645	20-25			
30	3640	25-30			Ruby Star Granodiorite, brown (7.5yr 5/2) matrix, with 25% yellowish red to reddish yellow (5yr 5/6 / 7.5yr 6/6) staining, matrix clasts up to 1/2 inch.
35	3635	30-35			
40	3630	35-40			
45	3625	40-45			
50	3620	45-50			
55	3615	50-55			Ruby Star Granodiorite, gray (10yr 6/1), with 10% reddish yellow (5yr 5/6) staining (iron oxide), pyrite common at 40-45 ft. bgs.
60	3610	55-60			
65	3605	60-64			
70	3600				
75	3595				



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SHEET 1 of 1

BORING LOG: MW-2008-03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 07/25/2008 08:45 AM
FINISH DATE/TIME: 07/25/2008 07:20 AM

LATITUDE (NAVD27): 954410.134
LONGITUDE (NAVD 27): 319781.86

TOP OF GROUND ELEVATION: 3658.97 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

REPORT: TUCSON-ENVIRONMENTAL / PROJECT: FMI SIERRITA VRP PHASE 1 TASK 1Z PHASE 1 REPORT: TUCSON-ENVIRONMENTAL / PROJECT: FMI SIERRITA VRP BORING LOGS / BACKUP FILES: FMI SIERRITA VRP BORING LOGS / GRUBB: FMI SIERRITA VRP BORING LOGS / TUCSON V4.1 GLE / PRINTED: 8/5/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3655	0-5			Ruby Star Granodiorite, grayish brown (10yr 5/2), equigranular quartz, potassium feldspar, plagioclase, hornblende, 5-15% yellowish red to strong brown (5yr 5/6 to 7.5yr 6/6) staining (iron oxide).
10	3650	5-10			
15	3645	10-15			
20	3640	15-20			
25	3635	20-25			Ruby Star Granodiorite, gray (10yr 5/1), with 5-25% reddish yellow (7.5yr 6/6) staining (iron oxide), trace pyrite.
30	3630	25-30			
35	3625	30-35			
40	3620	35-40			
45	3615	40-45			Ruby Star Granodiorite, gray (7.5yr 6/1), with 50% yellowish brown (10yr 5/6) staining (iron oxide), stained fracture surfaces on larger rock fragments.
50	3610	45-50			Ruby Star Granodiorite, gray (10yr 6/1), with 5% brownish yellow (10yr 6/6) staining (iron oxide).
55	3605	50-55			Ruby Star Granodiorite, gray (10yr 6/1), with 50% yellowish red (5yr 5/6) staining (iron oxide).
60	3600	55-60			Ruby Star Granodiorite, gray (5yr 5/1), with 5-40% yellowish red (2.5yr 5/8) staining (iron oxide), note 1 inch clast with fracture filling (white).
65	3595	60-63			
70	3590				
75	3585				



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SHEET 1 of 1

BORING LOG: MW-2008-04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 07/26/2008 11:55 AM
FINISH DATE/TIME: 07/27/2008 11:00 AM

LATITUDE (NAVD27): 954430.599
LONGITUDE (NAVD 27): 319467.415

TOP OF GROUND ELEVATION: 3649.76 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3645	0-5			Ruby Star Granodiorite, gray (10yr 5/1), equiangular quartz, potassium feldspar, plagioclase, hornblende, with 60% reddish brown (5yr 5/4) staining (iron oxide).
10	3640	5-10			
15	3635	10-15			10.0' Ruby Star Granodiorite, gray (10yr 6/1), with 80-95% yellowish red (5yr 5/6) staining (iron oxide), larger clasts show fracture filling and stains, possible sericite (clayey white).
20	3630	15-20			
25	3625	20-25			
30	3620	25-30			
35	3615	30-35			35.0' Ruby Star Granodiorite, gray (10yr 6/1), with 10% brownish yellow (10yr 6/6) stained clasts (iron oxide), trace fracture staining on larger clasts.
40	3610	35-40			40.0' Ruby Star Granodiorite, gray (10yr 6/1), with 5-10% reddish yellow (7.5yr 6/6) stained clasts (iron oxide), trace fracture filling and stains, possible sericite (clayey white), trace pyrite.
45	3605	40-45			
50	3600	45-50			
55	3595	50-55			
60	3590	55-60			
65	3585	60-64			
70	3580				
75	3575				



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SHEET 1 of 1

BORING LOG: MW-2008-05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 07/28/2008 10:15 AM
FINISH DATE/TIME: 07/28/2008 02:15 PM

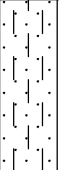
LATITUDE (NAVD27): 954474.961
LONGITUDE (NAVD 27): 318319.787

TOP OF GROUND ELEVATION: 3606.48 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

REPORT TUCSON-ENVIRONMENTAL / PROJECT-FMI SIERRITA VRP-PHASE 1/TASK 1Z PHASE 1/REPORTREV_0/APPENDICES/APPENDIX A - SOIL BORING LOGS/INDIVIDUAL BORING LOGS AND BACKUP FILES/FMI SIERRITA VRP BORING LOGS/GRUBB/FMURS TUCSON V4.1.GLB | PRINTED: 8/5/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3605	0-5	SM		Sand, light gray (10yr 7/1), fine to coarse grained, subrounded, 10% reddish colored grains, weathered biotite.
10	3600	5-10			
15	3595	10-15			10.0'
20	3590	15-20			
25	3585	20-25			
30	3580	25-30			25.0'
35	3575	30-35			30.0'
40	3570	35-40			
45	3565	40-45			
50	3560	45-50			
55	3555	50-54			
60	3550				
65	3545				
70	3540				
75	3535				



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SHEET 1 of 1

BORING LOG: MW-2008-06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 07/30/2008 08:45 AM
FINISH DATE/TIME: 07/31/2008 11:35 AM

LATITUDE (NAVD27): 954282.22
LONGITUDE (NAVD 27): 318537.298

TOP OF GROUND ELEVATION: 3607.31 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

REPORT TUCSON-ENVIRONMENTAL | PROJECT-FMI SIERRITA VRP-PHASE 1 | TASK 1Z PHASE 1 | REPORT PREVIOUS APPENDICES APPENDIX A - SOIL BORING LOGS INDIVIDUAL BORING LOGS AND BACKUP FILES FMI SIERRITA VRP BORING LOGS GRUBER/URS TUCSON V4.1.GLB | PRINTED 8/5/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3605	0-5	SM		Silty sand, grayish brown (10yr 5/2), fine to coarse grained, subangular, few clasts of granodiorite, loose, dry, decomposed.
10	3600	5-10			
15	3595	10-15			10.0' Ruby Star Granodiorite, gray (10yr 6/1), with 10% yellowish red (5yr 5/8) staining (iron oxide).
20	3590	15-20			15.0' Ruby Star Granodiorite, gray (10yr 7/1), with 40% yellowish red (5yr 5/6) to yellow (2.5y 7/6) stained clasts, trace white clay on fracture surfaces (sericite).
25	3585	20-25			20.0' Ruby Star Granodiorite, gray (10yr 5/1) with 15-30% brownish yellow (10yr 6/8) to yellowish red (5yr 4/6) staining (iron oxide), some green alteration on fracture surfaces, 1 inch of pale yellow clay (2.5y 7/3) or sericite at around 40 ft.
30	3580	25-30			
35	3575	30-35			
40	3570	35-40			
45	3565	40-42			
50	3560				



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SHEET 1 of 1

BORING LOG: MW-2008-07

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/06/2008 10:20 AM
FINISH DATE/TIME: 08/06/2008 02:55 PM

LATITUDE (NAVD27): 954175.809
LONGITUDE (NAVD 27): 316711.543

TOP OF GROUND ELEVATION: 3602.64 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

REPORT:UCSON-ENVIRONMENTAL | PROJECT:FMI SIERRITA VRP-PHASE 1 | TASK 17: PHASE 1 REPORT:REV_0 | APPENDICES:APPENDIX A - SOIL BORING LOGS/INDIVIDUAL BORING LOGS AND BACKUP FILES/FMI SIERRITA VRP BORING LOGS/GRUBBER/URS TUCSON V4.1.GLB | PRINTED:05/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3600	0-5	GC		Light brown (7.5yr 6/4) clayey gravel with sand, angular, fine grained.
10	3595	5-10			
15	3590	10-15			10.0'
20	3585	15-20	SC		Reddish brown (5yr 5/4) sand, fine to coarse, angular to subangular with trace clay. Yellowish red grains, pale brown matrix. (10yr 5/3) Transitioning into a quartz monzonite.
25	3580	20-25			
30	3575	25-30			30.0'
35	3570	30-35	SC		Light brown (7.5yr 6/4) sand with disintegrated monzonite. Fine to coarse grained. Yellowish to red (5yr 5/8) feldspar grains.
40	3565	35-40			
45	3560	40-45			45.0'
50	3555	45-50			Dark yellowish brown, fine to coarse grained quartz monzonite with prevalent yellowish brown staining. Trace clay and gypsum minerals.
55	3550	50-52			
60	3545				
65	3540				
70	3535				
75	3530				



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SHEET 1 of 1

BORING LOG: MW-2008-08

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/07/2008 12:20 PM
FINISH DATE/TIME: 08/08/2008 02:30 PM

LATITUDE (NAVD27): 955301.571
LONGITUDE (NAVD 27): 316285.924

TOP OF GROUND ELEVATION: 3566.59 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3565	0-5	GW		Gravel, angular, brown (7.5yr 5/4), with some yellow stained granodiorite with some dark red stained (iron oxide) fragments, trace pyrite.
5	3560	5-10	GW		Sandy Gravel, GW, brown (7.5yr 5/4), fine to coarse with clasts up to 1.5 inches, 50% staining (iron oxide) red 2.5YR 5/6 to yellow 10YR 7/8, angular.
10	3555	10-15	GW		
15	3550	15-20	GW		Gravel (GW), coarse with clasts up to 2.5 inches, 90% granodiorite with 10% yellow (10yr 7/6) to red (10yr 4/6) staining (iron oxide), with some sand and gravel (andesite & granodiorite) fragments from 25-29 ft., apparent fill material.
20	3545	20-25	GW		
25	3540	25-30	GW		
30	3535	30-35			Ruby Star Granodiorite, gray (10yr 5/1), with 5% yellowish red (5yr 5/6) staining (iron oxide), fine to coarse groundmass up to 0.75 inch, quartz, potassium feldspar, plagioclase.
35	3530	35-40			
40	3525	40-45			
45	3520	45-48			Ruby Star Granodiorite, gray (10yr 5/1), with 5% yellowish red (5yr 5/6) staining on clasts up to 0.75 inch, 20% greenish gray (5gy 6/1), some pyrite.
50					



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SHEET 1 of 1

BORING LOG: MW-2008-09

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/10/2008 08:05 AM
FINISH DATE/TIME: 08/10/2008 10:00 AM

LATITUDE (NAVD27): 953712.046
LONGITUDE (NAVD 27): 316297.744

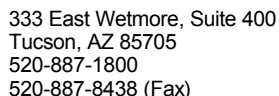
TOP OF GROUND ELEVATION: 3616.46 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

REPORT TUCSON-ENVIRONMENTAL / PROJECT-FMI SIERRITA VRP-PHASE 1/TASK 1Z PHASE 1/REPORTREV_0/APPENDICES/APPENDIX A - SOIL BORING LOGS/INDIVIDUAL BORING LOGS AND BACKUP FILES/FMI SIERRITA VRP BORING LOGS/GRUBBAPRURS TUCSON V4.1.GLB | PRINTED: 8/15/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3615	0-5			Gravelly fill leading to a mixture of granodiorite and quartz monzonite, mafics yellowish red (5yr 4/6) with prominent red staining.
10	3610	5-10			
15	3605	10-15			
20	3600	15-20			
25	3595	20-25			
30	3590	25-30			Fine to coarse sand with crushed granodiorite, no staining, feldspar clasts.
35	3585	30-35			
40	3580	35-40			
45	3575	40-45			
50	3570	45-50			
55	3565	50-52			Gray matrix with prominent yellowish red feldspar, trace staining, trace pyrite veins.
60	3560				
65	3555				
70	3550				
75	3545				



DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/11/2008 01:55 PM
FINISH DATE/TIME: 08/12/2008 10:00 AM

TOP OF GROUND ELEVATION: 3601.77 A.S.L.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS	
	3600	0-5			Granodiorite. Gray matrix (10yr 5/1) with stained grains of reddish yellow (7.5yr 6/6) to yellowish red (5ry 5/8). Dissentegrated granodiorite.	
5	3595	5-10				
10	3590	10-15			10.0'	Granodiorite, 40% gray matrix (10yr 6/1) with 60% stained grains and clasts of granodiorite, tiny trace of white clay, staining prominent.
15	3585	15-20				
20	3580	20-25				
25	3575	25-30				
30	3570	30-35			30.0'	Granodiorite with a 3/4 inch stained fracture.
35	3565	35-40			35.0'	Granodiorite, gray (10yr 6/1) with yellowish brown staining, coarse sand clasts.
40	3560	40-45				
45	3555	45-50				
50	3550	50-55				
55	3545					
60	3540					
65	3535					
70	3530					
75						



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SHEET 1 of 1

BORING LOG: MW-2008-11

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/12/2008 01:45 PM
FINISH DATE/TIME: 08/13/2008 10:00 AM

LATITUDE (NAVD27): 952219.511
LONGITUDE (NAVD 27): 317271.232

TOP OF GROUND ELEVATION: 3664.77 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

REPORT TUCSON-ENVIRONMENTAL | PROJECT-FMI SIERRITA VRP-PHASE 11 TASK 12 PHASE 11 REPORTREV_0 APPENDICES APPENDIX A - SOIL BORING LOGS INDIVIDUAL BORING LOGS AND BACKUP FILES FMI SIERRITA VRP BORING LOGS GRUBER/FARFURS TUCSON V4.1 GLE | PRINTED 8/15/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3660	0-5			Clayey Gravel/fill, yellowish brown (2.5yr 6/4) with a mixture of clays and fill. Stained grains and coarse gravel prevalent.
10	3655	5-10			
15	3650	10-15			
20	3645	15-20			
25	3640	20-25			Granodiorite. Gray matrix (10yr 5/1) with brownish yellow stained grains (10yr 6/6) with fractures throughout the entire section to the bottom.
30	3635	25-30			
35	3630	30-35			
40	3625	35-40			
45	3620	40-45			
50	3615	45-50			
55	3610	50-52			
60	3605				
65	3600				
70	3595				
75	3590				



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SHEET 1 of 3

BORING LOG: MW-2008-12

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/21/2008 09:30 AM
FINISH DATE/TIME: 08/22/2008 03:30 PM

LATITUDE (NAVD27): 953075.271
LONGITUDE (NAVD 27): 324000.981

TOP OF GROUND ELEVATION: 3775.45 A.S.L.

COMMENTS: HQ core to 70 ft. bgs; ARCH 70 to 155 ft. bgs, cuttings on 5 ft. intervals.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: HQ Core and Cuttings

REPORT:UCSON-ENVIRONMENTAL | PROJECT:FMI SIERRITA VRP-PHASE 11TASK 12 PHASE 11REPORTREV_0APPENDICESAPPENDIX A - SOIL BORING LOGSINDIVIDUAL BORING LOGS AND BACKUP FILESFMI SIERRITA VRP BORING LOGS.GRAPHICAPPENDIX A - SOIL BORING LOGS

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3775				Weathered granodiorite with a clayey matrix, yellowish brown (10yr 5/6).
5	3770	0-4		4.0'	Granodiorite, competent, two medium angle stained fractures; 5.7-7 ft. weathered, incompetent, yellowish red (5yr 5/6), recovery = 75%.
10	3765	4-7		7.0'	Granodiorite, 40% competent, 60% weathered yellowish red (5yr 5/8), friable, 5 low to medium angle fractures, stained, recovery = 70%.
15	3760	7-12		12.0'	Granodiorite, 80% competent, 20% weathered, stained yellowish red (5yr 5/8), friable, 9-10 medium to high angle fractures, recovery = 80%.
20	3755	12-17		17.0'	Granodiorite, 50% competent, 7 medium angle fractures, stained weathered; 50% weathered, friable, stained red (2.5yr 4/6) grading to yellow (10yr 7/6), clayey, recovery = 72%.
25	3750	17-22		22.0'	Granodiorite, 80% competent, 8-10 medium to high angle fractures stained yellowish red (5yr 4/6); 20% weathered, friable, some staining, fresh plant roots at 25 ft. bgs, recovery = 85%.
30	3745	22-27		27.0'	Granodiorite, 90% competent, 6-8 medium angle fractures and 1 high angle, all stained yellowish red (5yr 4/6); 10% weathred, friable, some staining, recovery = 92%.
35	3740	27-32		32.0'	Granodiorite, 95% competent, 5-7 low to medium angle fractures stained yellowish red to dark reddish brown (5yr 3/3); 5% weathered, friable, prominent pyrite at 37' bgs, recovery = 100%.
40	3735	32-37		37.0'	Granodiorite, 100% competent, 3-4 medium angle fractures, stained, 1-2mm veins of pyrite at 38.6 to 40.2 ft. bgs, pyrite disseminated throughout, recovery = 100%.
45	3730	37-41		41.0'	Granodiorite, 100% competent, 4 low to medium angle fractures, stained and mineralized, pyrite and less chalcopyrite, recovery = 100%.
50		41-47		47.0'	Granodiorite, 100% competent, 3-4 medium angle fractures commonly mineralized with pyrite, noteable at 48 ft. bgs, possible trace molybdenite, recovery = 100%.
		47-52			



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SHEET 2 of 3

BORING LOG: MW-2008-12

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/21/2008 09:30 AM
FINISH DATE/TIME: 08/22/2008 03:30 PM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3725				
55	3720	52-57		52.0'	Granodiorite, 100% competent, 2 veins filled with quartz and green epidote centered in vein, pyrite disseminated throughout, recovery = 100%.
60	3715	57-62		57.0'	Granodiorite, 100% competent, 7 flat to high angle veins filled with quartz and green epidote, some fractures mineralized with pyrite, recovery = 100%.
65	3710	62-67		62.0'	Granodiorite, 100% competent, significant increase in potassium feldspar, decreased biotite, pyrite disseminated throughout, recovery = 100%.
70	3705	67-70		67.0'	As above, recovery = 100%, end of core.
75	3700	70-75		70.0'	Granodiorite, greenish gray (5gy 6/1), secondary fracture filling (green), hard rock.
80	3695	75-80			
85	3690	80-85			
90	3685	85-90			
95	3680	90-95			
100	3675	95-100			
105	3670			105.0'	Granodiorite, 50% greenish gray (5gy 5/1), grading to 50% weak red (5yr 5/6) altered feldspar with clay.



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SHEET 3 of 3

BORING LOG: MW-2008-12

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/21/2008 09:30 AM
FINISH DATE/TIME: 08/22/2008 03:30 PM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		105-110			
110	3665				
		110-115			
115	3660				
		115-120			
120	3655				
		120-125			
125	3650				125.0'
		125-130			Granodiorite, 75% greenish gray, 20% weak red, 5% very dark green to black, possible copper, trace iron staining and altered feldspar.
130	3645				
		130-135			132.0'
135	3640				Granodiorite, 100% gray (10yr 5/1), abundant disseminated pyrite, trace iron oxide staining.
		135-140			
140	3635				
		140-145			
145	3630				145.0'
		145-150			Granodiorite, 65-80% gray, 13-30% greenish gray (5gy 5/1), 5% iron oxide stained clasts, yellowish red, pyrite.
150	3625				
		150-153			
155	3620				
160	3615				



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SHEET 1 of 2

BORING LOG: MW-2008-13

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/23/2008 07:40 AM
FINISH DATE/TIME: 08/24/2008 12:00 PM

LATITUDE (NAVD27): 955094.896
LONGITUDE (NAVD 27): 322742.608

TOP OF GROUND ELEVATION: 3723.77 A.S.L.

COMMENTS: HQ core to 70 ft. bgs; ARCH 70 to 155 ft. bgs, cuttings on 5 ft. intervals.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: HQ Core and Cuttings

REPORT TUCSON-ENVIRONMENTAL / PROJECT-FMI SIERRITA VRP-PHASE 11 TASK 12 PHASE 11 REPORT PREVIOUS APPENDICES APPENDIX A - SOIL BORING LOGS INDIVIDUAL BORING LOGS AND BACKUP FILES FMI SIERRITA VRP BORING LOGS GRUBBER/URS TUCSON V4.1 GLE | PRINTED 8/15/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		0-4			Drilled with tricone bit.
5	3720	4-7		3.0'	Granodiorite, yellowish brown (10yr 5/4), highly weathered, abundant clay, recovery = 90%.
10	3715	7-12		7.0'	Granodiorite, 60% weathered, 40% highly weathered, friable, stained yellowish red (5yr 5/8), 2-3 fractures, stained, white matrix, recovery = 96%.
15	3710	12-17		12.0'	Granodiorite, 5% competent, 95% weathered, friable, soft, white, recovery = 52%.
20	3705	17-22		17.0'	Granodiorite, 70% weathred, high angle fractures, stained, granitic intrusion (green), 30% highly weathred, recovery = 98%.
25	3700	22-27		22.0'	Granodiorite, 100% competant, 7-8 high angle fractures, stained, trace pyrite, recovery = 100%.
30	3695	27-32		27.0'	Granodiorite, 100% competant, 2 high angle and 2 low angle fractures, stained, pyrite throughout, recovery = 100%.
35	3690	32-37		32.0'	Granodiorite, 100% competant, 2 high angle and 2 low angle fractures with moderate iron oxide staining, pyrite throughout, recovery = 98%.
40	3685	37-41		37.0'	Granodiorite, 100% competant, 2 high angle and 4 low angle fractures, 1 inch of plagioclase at 40.5 ft., recovery = 100%.
45	3680	41-47		42.0'	Granodiorite, 100% competant, 3-4 high angle and low angle fractures, stained, pyrite throughout, recovery = 100%.
50	3675	47-52		47.0'	Granodiorite 99%, trace pink granite (0.2 ft.), 4 high angle fractures filled with 50 ft. (calcite), white, recovery = 100%.



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SHEET 2 of 2

BORING LOG: MW-2008-13

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/23/2008 07:40 AM
FINISH DATE/TIME: 08/24/2008 12:00 PM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
55	3670	52-57			52.0' Granodiorite, 100% competent, 4 medium to low angle fractures, 1 mineralized with pyrite, some noticeable veins of epidote, pyrite throughout, recovery - 100%.
60	3665	57-62			57.0' Granodiorite, 100% competent, 2 high angle fractures (calcite filled), intrusions of epidote and granite above and below fractures, recovery = 100%.
65	3660	62-67			62.0' Granodiorite, 2 low to medium angle fractures (calcite filled), pyrite and chalcopryrite throughout, recovery = 100%.
70	3655	67-70			67.0' Granodiorite, 100% competent, 1 high angle (calcite filled) fracture, pyrite and chalcopryrite throughout, recovery = 100%.
75	3650	70-75			70.0' Granodiorite, light gray to gray, pyrite in veins and matrix, 1-5% staining on fractures, yellowish red (7.5yr 6/6), trace epidote (green) in veins.
80	3645	75-80			
85	3640	80-85			
90	3635	85-90			
95	3630	90-95			
100	3625	95-100			95.0' Granodiorite, 70% competent, 30% stained fractures and grains ranging brownish yellow (10yr 6/6) to yellow (10yr 7-8/6), pyrite in veins and matrix.
105	3620				



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SHEET 1 of 4

BORING LOG: MW-2008-14

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/24/2008 08:15 AM
FINISH DATE/TIME: 08/27/2008 01:45 PM

LATITUDE (NAVD27): 938790.044
LONGITUDE (NAVD 27): 306746.643

TOP OF GROUND ELEVATION: 3575.99 A.S.L.

COMMENTS: HQ core to 70 ft. bgs; ARCH 70 to 155 ft. bgs, cuttings on 5 ft. intervals.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: HQ Core and Cuttings

REPORT:UCSON-ENVIRONMENTAL | PROJECT:FMI SIERRITA VRP-PHASE 1 | TASK 17 PHASE 1 | REPORT:REV_0 | APPENDICES:APPENDIX A - SOIL BORING LOGS/INDIVIDUAL BORING LOGS AND BACKUP FILES/FMI SIERRITA VRP BORING LOGS/GRUBBAPRURS TUCSON V4.1.GLB | PRINTED:8/30/09

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3575				Alluvial gravel and sand, drilled with tricone bit.
5	3570	0-8	SM		
10	3565	8-12	SM	8.0'	Sandstone, pink (7.5yr 7/3), fine grained, weak to moderate cementation, 90% quartz, 10% mafics, rounded, grades to yellowish brown (5yr 5/4), recovery = 68%, lithic fragments at 11 ft.
15	3560	12-17	SM	12.0'	Sandstone, light brown (7.5yr 6/3), fine grained, strong cementation, recovery = 100%.
20	3555	17-22	SM	17.0'	Sandstone, 40% fine to medium sand, 10% brown clay, 50% lithic fragments, recovery = 100%.
25	3550	22-27	SM	22.0'	Sandstone, brown (10yr 5/3), as above, some strong cementation, lithic fragments, recovery = 100%.
30	3545	27-32	SM	27.0'	Sandstone, 40% fine to medium sand, 10% brown clay, 50% lithic fragments, recovery = 100%.
35	3540	32-37	SM	32.0'	As above, Recovery 100%.
40	3535	37-42	SM	37.0'	As above, strong concentration, recovery = 100%.
45	3530	42-47	SM	42.0'	Sandstone, fine to medium sand, rhyolite and granodiorite cobbles, gravel, mafics, recovery = 100%.
50		47-52	SM	47.0'	As above, recovery = 100%.



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SHEET 2 of 4

BORING LOG: MW-2008-14

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/24/2008 08:15 AM
FINISH DATE/TIME: 08/27/2008 01:45 PM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3525				
55	3520	52-57	SM	52.0'	Sandstone, brown (10yr 5/3), fine to coarse sand, rounded, gravel to cobble sized lithic fragments, well cemented, recovery = 100%.
60	3515	57-62	SM	57.0'	Sandstone, as above, moderate cementation, gypsum vein at 60.8 ft., no lithic fragments, recovery = 100%.
65	3510	62-67	SM	62.0'	Sandstone, pink (7.5yr 7/3), as above, recovery = 100%.
70	3505	67-72	SM	67.0'	Sandstone, brown (7.5yr 5/4), fine to coarse sand, rounded, abundant cobble sized lithic fragments (mafic), angular, recovery = 100%.
75	3500	72-77	SM	72.0'	Sandstone, as above.
80	3495	77-82	SM	77.0'	Sandstone, light brown (7.5yr 6/3), as above.
85	3490	82-87	SM	82.0'	Sandstone, light brown (7.5yr 6/3), fine to coarse sand, rounded, lithic fragments absent 83-86 ft., below 86 ft. color is reddish brown (5yr 5/4), abundant lithic fragments, recovery = 100%.
90	3485	87-92	SM	87.0'	Sandstone, as above.
95	3480	92-97	SM	92.0'	Sandstone, light reddish brown (5yr 6/3) to reddish gray (5yr 5/2), fine to coarse sand, gravel to cobble-sized lithic fragments, calcareous halo on bottom of lithics, recovery = 100%.
100	3475	97-102	SM	97.0'	Sandstone, as above, recovery = 100%.
105	3470	102-107	SM	102.0'	Sandstone, as above, recovery = 100%.
				107.0'	



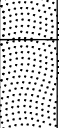
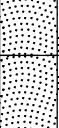
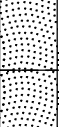
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SHEET 3 of 4

BORING LOG: MW-2008-14

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/24/2008 08:15 AM
FINISH DATE/TIME: 08/27/2008 01:45 PM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
110	3465	107-112	SM		Sandstone, as above, recovery = 100%.
112.0'					Sandstone, as above, recovery = 100%
115	3460	112-117	SM		Sandstone, as above, weak cementation, recovery = 100%.
117.0'					Sandstone, as above, weak cementation, recovery = 100%.
120	3455	117-122	SM		Sandstone, as above, possible water bearing zone 125-126.3 ft., loose, recovery = 100%.
122.0'					Sandstone, as above, possible water bearing zone 125-126.3 ft., loose, recovery = 100%.
125	3450	122-127	SM		Sandstone, light brown (7.5yr 6/3), fine grained; layered sandstone, brown (7.5yr 5/3), coarse grained, angular lithic (mafic) fragments.
127.0'					Sandstone, light brown (7.5yr 6/3), fine grained; layered sandstone, brown (7.5yr 5/3), coarse grained, angular lithic (mafic) fragments.
130	3445	127-132	SM		Sandstone, as above, recovery = 100%.
132.0'					Sandstone, as above, recovery = 100%.
135	3440	132-137	SM		Sandstone, light reddish brown (5yr 6/3) grades to reddish brown (5yr 4/3), few lithic fragments, moderate to strong cementation, recovery = 100%.
137.0'					Sandstone, light reddish brown (5yr 6/3) grades to reddish brown (5yr 4/3), few lithic fragments, moderate to strong cementation, recovery = 100%.
140	3435	137-142	SM		Sandstone, brown (7.5 yr 4/3), weak cementation, recovery = 100%.
142.0'					Sandstone, brown (7.5 yr 4/3), weak cementation, recovery = 100%.
145	3430	142-147	SM		Sandstone, brown (7.5yr 4/3), at 150 ft. strong cementation with lithic (mafic) fragments, recovery = 46%.
147.0'					Sandstone, brown (7.5yr 4/3), at 150 ft. strong cementation with lithic (mafic) fragments, recovery = 46%.
150	3425	147-152	SM		Sandstone, as above, weak cementation, recovery = 100%.
152.0'					Sandstone, as above, weak cementation, recovery = 100%.
155	3420	152-157	SM		Sandstone, light reddish brown (5yr 6/3), fine-medium grained, well rounded, weak to moderate layered cementation, angular lithic fragments, mostly mafic, recovery = 100%.
157.0'					Sandstone, light reddish brown (5yr 6/3), fine-medium grained, well rounded, weak to moderate layered cementation, angular lithic fragments, mostly mafic, recovery = 100%.
160	3415	157-162	SM		Sandstone, reddish brown (5yr 5/3), fine-medium sand, well rounded, moderate cementation, lithic fragments absent, recovery = 100%.
162.0'					Sandstone, reddish brown (5yr 5/3), fine-medium sand, well rounded, moderate cementation, lithic fragments absent, recovery = 100%.



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SHEET 4 of 4

BORING LOG: MW-2008-14

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/24/2008 08:15 AM
FINISH DATE/TIME: 08/27/2008 01:45 PM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
165	3410	162-167	SM		
					167.0'
		167-170	SM		Sandstone, as above, recovery = 100%. Total depth 170 ft.
170	3405				
175	3400				
180	3395				
185	3390				
190	3385				
195	3380				
200	3375				
205	3370				
210	3365				
215	3360				
220	3355				



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SHEET 1 of 2

BORING LOG: MW-2008-15

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/28/2008 07:30 AM
FINISH DATE/TIME: 08/28/2008 12:00 PM

LATITUDE (NAVD27): 935031.333
LONGITUDE (NAVD 27): 310794.238

TOP OF GROUND ELEVATION: 4172.52 A.S.L.

COMMENTS: Composite, unwashed samples, obtained on 5 foot intervals from rig cyclone.

RIG TYPE: Speedstar 50K
DRILLING METHOD: ARCH
SAMPLING METHOD: Cuttings, 5 ft. composite.

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	4170	0-5			Yellowish brown (10yr 5/4) severely weathered quartz monzonite, highly fractured, prevalent magnesium staining. Biotite, epidote and plagioclase minerals present. Pyrite veins present past 25 ft. bgs.
10	4165	5-10			
15	4160	10-15			
20	4155	15-20			
25	4150	20-25			
30	4145	25-30			
35	4140	30-35			
40	4135	35-40			
45	4130	40-45			
50	4125	45-50			



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SHEET 2 of 2

BORING LOG: MW-2008-15

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Mike Stockton
LOGGED BY: Mark Sollman
START DATE/TIME: 08/28/2008 07:30 AM
FINISH DATE/TIME: 08/28/2008 12:00 PM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
55	4120	50-55			Quartz monzonite, distinct slickenside around 60 degree angle, smeared pyrite and fractures indicate nearly vertical movement. Entirely fractured to the bottom of the hole.
60	4115	55-60			
65	4110	60-65			
70	4105	65-69.2			
75	4100				
80	4095				
85	4090				
90	4085				
95	4080				
100	4075				
105	4070				



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SHEET 1 of 3

BORING LOG: ET-SB01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Gabe Escamille
LOGGED BY: Mark Sollman
START DATE/TIME: 09/17/2008 12:00 AM
FINISH DATE/TIME: 09/18/2008 12:00 AM

LATITUDE (NAVD27): 964088.055
LONGITUDE (NAVD 27): 316822.581

TOP OF GROUND ELEVATION: 3611.6 A.S.L.

COMMENTS:

RIG TYPE: CME 85
DRILLING METHOD: Auger
SAMPLING METHOD: Split Spoon/SPT

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3610				Tailing, very fine grained, light gray (10yr 7/1) dry, non-plastic
5		ET-SB01-4.5-6.0	SM		
	3605				5.0' Color grades to light grey (2.5 yr 7/2)
10		ET-SB01-9.5-11.0	SM		
	3600				11.0' Color grades to light olive grey (5yr 6/2) with trace clay, slightly moist, medium stiff
15		ET-SB01-14.51-6.0	SM		
	3595				
20		ET-SB01-19.5-21.0	SM		20.0' Very fine silty sand with clay, grey (5yr 5/1), intermittant layers of olive gray, trace iron staining. Clayey layers usually 1/4 to 1/2 inches.
	3590				
25		ET-SB01-24.5-26.0	SM		25.0' As above, sand layers usually 2 to 3 inches, slightly moist.
	3585				
30		ET-SB01-29.5-31.0	SM		30.0' Silty very fine sand, Olive grey (5yr 5/2) with clayey mottling trace iron staining, dark grey (5yr 5/1)
	3580				
35					



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SHEET 2 of 3

BORING LOG: ET-SB01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Gabe Escamille
LOGGED BY: Mark Sollman
START DATE/TIME: 09/17/2008 12:00 AM
FINISH DATE/TIME: 09/18/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		ET-SB01-34.5-36.0	SM		
3575					
40		ET-SB01-39.5-41.0	SM	40.0'	10 inches of sand, olive grey, visible micro layering approximately 1 millimeter of grey, 2 to 4 millimeter of olive grey, medium stiff. Silty fine sand with trace clay in layers and trace disseminated pyrite, dark grey (2.5yr 4/1)
3570					
45		ET-SB01-44.5-46.0		45.0'	Thin pyrite layer, slightly moist, trace iron staining color grades to olive grey (5yr 5/2), moist, low plasticity, grades medium stiff to soft
3565					
50		ET-SB01-49.5-51.0	SM		
3560					
55		ET-SB01-54.5-56.0			
3555					
60		ET-SB01-59.5-61.0		60.0'	Gravelly silty sand, black, roots, soft at 60.5' bgs, Sharp contact with sandy clay with caliche nodules trace gravel, dusky red (2.5yr). Fine to medium silty sand, brown (7.5yr 5/6) slightly moist, native soil at 60.5 feet
3550					
65		ET-SB01-64.5-66.0	SW-SM		
3545					
70		ET-SB01-69.5-71.0			
3540					
75				75.0'	



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SHEET 3 of 3

BORING LOG: ET-SB01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Gabe Escamille
LOGGED BY: Mark Sollman
START DATE/TIME: 09/17/2008 12:00 AM
FINISH DATE/TIME: 09/18/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		ET-SB01-74.5-76.0			
	3535		SW-SM		As above, grades to very firm
80		ET-SB01-79.5-81.0			
	3530				As above, gravels range from fine to coarse up to 2 inches
85		ET-SB01-84.5-86.0			
	3525				
90		ET-SB01-89.5-91.0	SW-SM		
	3520				
95		ET-SB01-94.5-96.0			
	3515				
100		ET-SB01-99.5-101.0			
	3510				
105					
	3505				
110					
	3500				
115					



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SHEET 1 of 3

BORING LOG: ET-SB02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Gabe Escamille
LOGGED BY: Mark Sollman
START DATE/TIME: 09/19/2008 12:00 AM
FINISH DATE/TIME: 09/19/2008 12:00 AM

LATITUDE (NAVD27): 961548.364
LONGITUDE (NAVD 27): 314666.602

TOP OF GROUND ELEVATION: 3606.04 A.S.L.

COMMENTS:

RIG TYPE: CME 85
DRILLING METHOD: Auger
SAMPLING METHOD: Split Spoon/SPT

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3605				Surface gravel layer
5		ET-SB02-4.5-6.0	GC		
	3600		CL		Clay, yellowish red (7.5yr 6/6) soft, high plasticity, slightly moist
10		ET-SB02-9.5-11.0			Very fine sand some layers of clay and silty clay, yellowish (2.4yr 6/6), iron staining, soft, high plasticity.
	3595		SM		
15		ET-SB02-14.5-16.0			
	3590				
20		ET-SB02-19.5-21.0			
	3585				As above, layers of very fine sand and sandy clay, grades to dark gray (5y 4/1) loose, high plasticity, moist.
25		ET-SB02-24.5-26.0	SM		
	3580				
30		ET-SB02-29.5-31.0			
	3575				AS above, with layers of very fine gravelly sand (5y 6/1), trace clay, moist
35					



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SHEET 2 of 3

BORING LOG: ET-SB02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Gabe Escamille
LOGGED BY: Mark Sollman
START DATE/TIME: 09/19/2008 12:00 AM
FINISH DATE/TIME: 09/19/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		ET-SB02-34.5-36.0			
3570					
40		ET-SB02-39.5-41.0	SM		40.0' Becomes wet
3565					41.0' Fine sand trace clay, grey to dark grey (5yr 5/1) low plasticity, loose, saturated
45		ET-SB02-44.5-46.0	SP		
3560					
50		ET-SB02-49.5-51.0	SP		51.0' Fine sand, Olive grey (5yr 5/2) with clay mottling, reddish yellow (7.5yr 6/6) gravel layer at 51 ft, with black sandy clay with charcoal
3555					
55		ET-SB02-54.5-56.0	CL SM		55.0' Gravelly clay with caliche nodules, yellow red (5yr 4/6) medium to high plasticity, slightly moist, loose with fine sand and silt
3550					
60		ET-SB02-59.5-61.0			
3545					
65		ET-SB02-64.5-66.0			
3540					
70		ET-SB02-69.5-71.0			
3535					73.0' grades to strong brown(7.5yr 5/6)
75					



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SHEET 3 of 3

BORING LOG: ET-SB02

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Gabe Escamille
LOGGED BY: Mark Sollman
START DATE/TIME: 09/19/2008 12:00 AM
FINISH DATE/TIME: 09/19/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3530	ET-SB02-74.5-76.0			
80	3525	ET-SB02-79.5-81.0	CL		
85	3520	ET-SB02-84.5-86.0			
90	3515	ET-SB02-89.5-91.0			
			GC		91.0' Clayey gravel, Brown (7.5yr 4/4), moist, high plasticity
95	3510	ET-SB02-94.5-96.0			
					96.0' Gravelly sand, brown (7.5yr 5/6) loose, moist
100	3505	ET-SB02-99.5-101.0	SW		
105	3500				
110	3495				
115					



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SHEET 1 of 2

BORING LOG: ST-SB01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 09/24/2008 12:00 AM
FINISH DATE/TIME: 09/26/2008 12:00 AM

LATITUDE (NAVD27): 972503.14
LONGITUDE (NAVD 27): 306433.758

TOP OF GROUND ELEVATION: 3533.25 A.S.L.

COMMENTS:

RIG TYPE: CME 1250 Track Mount
DRILLING METHOD: Auger
SAMPLING METHOD: Split Spoon/SPT

REPORT\TUCSON\ENVIRONMENTAL\PROJECT\FMI SIERRITA VPP-PHASE 1\TASK 17_PPHASE 1\REPORTS\SOIL REPORT_2008\REV_0\APPENDICES\APPENDIX A - SOIL BORING LOGS\INDIVIDUAL BORING LOGS AND BACKUP FILES\FMI SIERRITA VPP BORING LOGS\GENERAL\URS TUCSON V4.1.GLB | PRINTED: 2/23/10

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3530	ST-SB01-4-5.5	SM		SILTY SAND, very fine to fine sand, light olive gray (5Y 6/2) subrounded to sub-angular, soft.
10	3525	ST-SB01-9-10.5			Grades gray (5Y 6/1).
15	3520	ST-SB01-14-15.5			
20	3515	ST-SB01-19-20.5			
25	3510	ST-SB01-24-25.5			
30	3505	ST-SB01-29-30.5	ML		CLAYEY SILT, dark gray, slightly plastic, slightly moist.
35	3500	ST-SB01-34-35.5			Coarser and thicker 4 - 6" layers of light to dark gray sand (5Y 7/1 to 4/1), and thinner 1 - 2" layers of very fine sand and clay, nonplastic sand, very slightly moist. Clayey layers moist, low to medium plasticity.
40	3495	ST-SB01-39-40.5			Generally sharp contacts of dark gray SILTY SAND and gray fine sand.
45	3490	ST-SB01-44-45.5			
50	3485	ST-SB01-49-50.5			Becoming very moist to wet.
55	3480	ST-SB01-54-55.5			1" layer of pale brown fine SAND (10YR 6/3).
60	3475	ST-SB01-59-60.5			Grades to very soft, gray (5Y 5/1), very moist to wet.
65	3470	ST-SB01-64-65.5			First water encountered 61.8'
70	3465	ST-SB01-69-70.5			Very soft and saturated.
75	3460	ST-SB01-74-75.5			Grades soft.
80	3455	ST-SB01-79-80.5			Very soft, grades soft.
85	3450	ST-SB01-84-85.5			Grades dark gray (5Y 4/1).
90	3445	ST-SB01-89-90.5			Saturated.
95	3440	ST-SB01-94-95.5			
100	3435	ST-SB01-99-100.5	CL		SILTY CLAY, (2.5Y 6/1), moist, 6 inch layer of fine to medium subrounded sand, wet.
105	3430	ST-SB01-104-105.5			Grades wet.
110	3425	ST-SB01-109-110.5			Grades to moist SILTY CLAY ranging gray (2.5 Y 6.5 to 1) in layers, saturated.
115	3420	ST-SB01-114-115.5			104' to 105' SAND, wet grading moist.
120	3415	ST-SB01-119-120.5			105' to 105.5' SILTY CLAY, gray, saturated.
125	3410				109' to 109.5' SILTY CLAY, wet to 110', fine to medium grained sand, light brownish gray (2.5Y 6/2).
					SILTY CLAY, Gray (5Y 5/1), medium plasticity, very moist to wet.
					SILTY SAND, fine grained, olive gray (5Y 4/2), non-plastic, wet, .5 to 1.0" layers of soft gray silty clay and 2 to 6" layers of silty fine sand, grades to saturated.



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SHEET 2 of 2

BORING LOG: ST-SB01

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 09/24/2008 12:00 AM
FINISH DATE/TIME: 09/26/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
130	3405	ST-SB01-124-125.5	SM		Clay layers, soft, Sandy layers medium stiff, grades wet. SILTY SAND layers, light to dark gray (5Y 5-4/1), fine sand with trace clay.
135	3400	ST-SB01-130-131.5			
140	3395	ST-SB01-134-135.5			9" layer of fine SAND, with medium grained subangular, loose, saturated, sharp, contact with SILTY SAND, trace clay, fine grained, wet.
145	3390	ST-SB01-139-140.5	CL		Saturated, no clay.
150	3385	ST-SB01-144-145.5			147.0' SILTY CLAY, dark gray, soft, wet, with thin sand layers.
155	3380	ST-SB01-149-150.5			155.0' SILTY SAND layers are saturated, SILTY CLAY layers are wet, medium plasticity and thinner.
160	3375	ST-SB01-154-155.5	SM		SILTY SAND, fine grained, loose, subangular, saturated, dark gray (5Y 4/1). 6" layer of SILTY SAND, with clay, wet, soft, dark gray (5Y 4/1).
165	3370	ST-SB01-159-160.5			
170	3365	ST-SB01-164-165.5			Layer of coarser sand, fine to medium grained, subangular, loose. 100% fine subangular SAND, dark gray (5Y 4/1), loose, medium stiff, saturated.
175	3360	ST-SB01-169-170.5	SM		SILTY CLAYEY SAND, medium stiff, fine sand.
180	3355	ST-SB01-174-175.5			6 to 8" layers alternating SILTY SAND, fine grained and CLAYEY SILTY SAND, fine grained, saturated, wet clays.
185	3350	ST-SB01-179-180.5			
190	3345	ST-SB01-184-185.5	SM		
195	3340	ST-SB01-189-190.5			Grades soft, with finer sand and clay.
200	3335	ST-SB01-194-195.5			Grades very soft.
205	3330	ST-SB01-199-200.5	SM		Grades medium stiff with fine to medium sand.
210	3325	ST-SB01-204-205.5			1/4" clayey layer, clayey layers usually thinner than sandy layers.
215	3320	ST-SB01-209-210.5			
220	3315	ST-SB01-214-215.5	CL		Interbedded 4 to 6" layers of SILTY CLAY dark gray (5Y 4/1) and SILTY SAND, dark gray (5Y 4/1), fine grained sand and 1/4" layers of CLAY with trace silt, very dark gray (5Y 3/1) . All layers are wet.
225	3310	ST-SB01-219-220.5			
230	3305	ST-SB01-224-225.5			Interbedded layers of SILTY CLAY, dark gray (5Y 4/1), medium stiff, medium plasticity, and SILTY SAND, fine grained, nonplastic, dark gray (5Y 4/1).
235	3300	ST-SB01-229-230.5	CL		
240	3295	ST-SB01-234-235.5			Grades medium stiff to soft, moist to wet.
245	3290	ST-SB01-239-240.5			237.0' NATIVE SOIL, SANDY CLAY with little fine to coarse gravel, light brown (7.5 YR 5/6), fine to medium grained, hard, dry, and 2 to 4 mm caliche nodules.
250	3285	ST-SB01-244-245.5	CL		Gravels larger than 2".
255	3280	ST-SB01-249-250.5			Two inch layer of SANDY CLAY, plastic, brown (7.5YR 4/4), moist.
260	3275	ST-SB01-254-255.5			SILTY CLAY, trace fine gravel, brown (7.5YR 5/6), low to medium plasticity, stiff, slightly moist.
265	3270				TD at 255' bgs.



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SHEET 1 of 2

BORING LOG: ST-SB03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/02/2008 12:00 AM
FINISH DATE/TIME: 10/03/2008 12:00 AM

LATITUDE (NAVD27): 971866.376
LONGITUDE (NAVD 27): 313810.996

TOP OF GROUND ELEVATION: 3531.59 A.S.L.

COMMENTS: Soil boring converted to PZ-2008-20.

RIG TYPE: CME 1250 Track Mount
DRILLING METHOD: Auger
SAMPLING METHOD: Split Spoon/SPT

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3530	ST-SB03-4-5.5			Interbedded SANDY SILT, light olive gray (5Y 6/2), very fine to fine sand, slight to low plasticity, slightly moist, soft and thin 1/8 - 1/2" CLAYEY SILT, dark gray, moist, high plasticity and layers of coarser/finer sand.
10	3525	ST-SB03-9-10.5			
15	3520	ST-SB03-14-15.5			Alternating 1 - 4" layers of dark gray CLAYEY SILT and olive gray SANDY SILT.
20	3515	ST-SB03-19-20.5			
25	3510	ST-SB03-24-25.5			Rare 1/2" layer of light olive brown (2.5YR 5/3) SANDY SILT Sandy layers are stiff, clayey layers are soft
30	3505	ST-SB03-29-30.5			
35	3500	ST-SB03-34-35.5			
40	3495	ST-SB03-39-40.5			Grades wet.
45	3490	ST-SB03-44-45.5			3" layer of CLAYEY SILT, gray (5Y 5/1), 15" layer SANDY SILT. light gray. Very moist to wet.
50	3485	ST-SB03-49-50.5			
55	3480	ST-SB03-54-55.5			Grades moist. Grades very stiff on sandy layers, soft on clayey layers, sharp contact between layers.
60	3475	ST-SB03-59-60.5			
65	3470	ST-SB03-64-65.5			Grades gray (5Y 5/1).
70	3465	ST-SB03-69-70.5			
75	3460	ST-SB03-74-75.5			
80	3455	ST-SB03-79-80.5			3" layers of hard well compacted SILTY SAND, slightly moist.
85	3450	ST-SB03-84-85.5			2" layer containing Fe staining.
90	3445	ST-SB03-89-90.5			CLAYEY SILT layers, gray (5Y 5/1) and SANDY SILT layer, light gray (5Y7/1), very moist to wet.
95	3440	ST-SB03-94-95.5	CL-ML		Grades wet. Water level @ 97.17' bgs.
100	3435				



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SHEET 2 of 2

BORING LOG: ST-SB03

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/02/2008 12:00 AM
FINISH DATE/TIME: 10/03/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3430	ST-SB03-99-100.5			
105	3425	ST-SB03-104-105.5			Layers of CLAYEY SILT, dark gray, very moist to wet, and 4-6" layers SANDY SILT, fine sand, gray (5Y 6/1) soft and 1 - 2 " SANDY CLAY layers, very fine sand and darker gray (5Y 6/1). ranging to light olive gray (5Y 6/2)
110	3420	ST-SB03-109-110.5			
115	3415	ST-SB03-114-115.5			
120	3410	ST-SB03-119-120.5			
125	3405	ST-SB03-124-125.5			Moist to very moist.
130	3400	ST-SB03-129-130.5			Clayey layers. dark gray (2.5Y 4/1), Sandy layers, gray (2.5 Y 6/1) with sharp layer contact
135	3395	ST-SB03-134-135.5			
140	3390	ST-SB03-139-140.5			Grades moist, mostly SILTY SAND, fine sand, with no clay layers.
145	3385	ST-SB03-144-145.5			SANDY SILT, Olive gray (5Y 5/2) interlaced with gray clayey layers.
150	3380	ST-SB03-149-150.5			Spoon sampler is dripping wet. Sandy and clayey layers range from light olive gray (5Y 6/2) to gray (5Y 5/1), sandy layers are medium stiff, clayey layers are soft.
155	3375	ST-SB03-154-155.5			
160	3370	ST-SB03-159-160.5			
165	3365	ST-SB03-164-165.5			SANDY SILT, dark gray (2.5Y 5/1), very fine to fine grained, medium stiff, non plastic, moist.
170	3360	ST-SB03-169-170.5			
175	3355	ST-SB03-174-175.5			2" layer of SANDY SILT, only very fine sand.
180	3350	ST-SB03-179-180.5			Grades gray (2.5Y 5/1).
185	3345	ST-SB03-184-185.5			
190	3340	ST-SB03-189-190.5	SM		NATIVE SOIL - SILTY SAND, dark brown (7.5YR 3/2), fine to coarse sand, loose, very slightly moist with fine gravel and apparent organic matter.
195	3335	ST-SB03-194-195.5			
200	3330	ST-SB03-199-200.5	CL		CLAY, fine to coarse gravel, grades to strong brown (7.5YR 4/6) and no organic matter, grades moist, hard with caliche development between grains. Grades strong brown (7.5 YR 5/6) with clay, medium to high plasticity, grades yellowish red, (5YR 5/6) and very stiff.
205	3325	ST-SB03-204-205.5			
210	3320	ST-SB03-209-210.5			
					TD @ 210.5' bgs.



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SHEET 1 of 2

BORING LOG: ST-SB04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/05/2008 12:00 AM
FINISH DATE/TIME: 10/06/2008 12:00 AM

LATITUDE (NAVD27): 968755.909
LONGITUDE (NAVD 27): 315237.456

TOP OF GROUND ELEVATION: 3533.83 A.S.L.

COMMENTS: Soil boring covered to PZ-2008-19.

RIG TYPE: CME 1250 Track Mount
DRILLING METHOD: Auger
SAMPLING METHOD: Split Spoon/SPT

REPORT TUCSON-ENVIRONMENTAL | PROJECT: FMI SIERRITA VPP PHASE 1 TASK 17, PHASE 1 REPORT SOIL REPORT_2008REV_01 APPENDICES APPENDIX A - SOIL BORING LOGS INDIVIDUAL BORING LOGS AND BACKUP FILES FMI SIERRITA VPP BORING LOGS GERRAPRURS TUCSON V4.1.GLB | PRINTED 2/23/10

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3530	ST-SB04-4-5.5			SILTY SAND, gray 5Y 5/1, very fine to fine sand, loose, soft, moist with two thin 1/4" layers of slightly darker gray SILTY CLAY, very soft, medium plasticity.
10	3525	ST-SB04-9-10.5			Layer of SILTY SAND, trace disseminated pyrite, dark gray with greenish tint.
15	3520	ST-SB04-14-15.5			2" layer SILTY SAND, fine to medium sand, olive gray (5Y 5/2) and CLAYEY SAND, gray (5Y 5/2), very fine sand.
20	3515	ST-SB04-19-20.5			
25	3510	ST-SB04-24-25.5			Layering changes nearly every inch between sandy to clayey layers.
30	3505	ST-SB04-29-30.5			Olive gray sandy layers are medium stiff, clayey layers are soft.
35	3500	ST-SB04-34-35.5			Rare thin 1/2" layer of light gray SILT, possible eolian deposition.
40	3495	ST-SB04-39-40.5			Rare 3/8" thin light gray to white layer of weakly cemented SILT, possible crust layer.
45	3490	ST-SB04-44-45.5			Grades to light olive gray (5Y 6/2). 6" layer SILTY SAND, gray (2.5Y 6/1), fine sand, 3" layer SILTY SAND, very fine sand, dark gray (5Y 4/1) and 1/8" layer CLAYEY SILT, light gray.
50	3485	ST-SB04-49-50.5			
55	3480	ST-SB04-54-55.5			Thin 1" saturated zone of fine sand overlying 3/8" CLAY layer, otherwise moist only.
60	3475	ST-SB04-59-60.5			
65	3470	ST-SB04-64-65.5	CL-ML		5" layer of SAND, no silt or clay, light brownish gray (6/2) fine to medium, underlain by 3" layer of CLAY, gray (2.5 Y 5/1), medium to high plasticity.
70	3465	ST-SB04-69-70.5			SILTY SAND, gray (2.5Y 5/1), very fine to fine sand, separated in layers 2 -4" thick, with layers 1/4 - 2" layers of SILTY CLAY, very fine disseminated pyrite persists.
75	3460				



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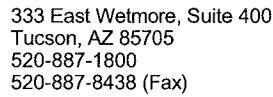
SHEET 2 of 2

BORING LOG: ST-SB04

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/05/2008 12:00 AM
FINISH DATE/TIME: 10/06/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		ST-SB04-74-75.5			
80	3455	ST-SB04-79-80.5			SILTY SAND, grades lighter gray (5Y 6.1) with slight greenish tint, fine.
85	3450	ST-SB04-84-85.5			SILTY SAND, gray (5Y 6/1), very fine, layers above and below 4" fine light olive gray layer of fine sand.
90	3445	ST-SB04-89-90.5			1/8" layer of concentrated pyrite, SILTY SAND, dark gray above the SILTY SAND and light gray below the SILTY SAND.
95	3440	ST-SB04-94-95.5			SILTY SAND, light olive gray and gray (5Y 5/1) very fine, moist, and 2" SAND, fine to medium sand, wet, overlaying CLAYEY SILT, gray.
100	3435	ST-SB04-99-100.5			8" layer fine to medium SAND, saturated, overlaying SILTY CLAY, dark gray, grades olive gray (5Y 5/2) for all sediments.
105	3430	ST-SB04-104-105.5			
110	3425	ST-SB04-109-110.5			Grades gray (5Y 5/1).
115	3420	ST-SB04-114-115.5			
120	3415	ST-SB04-119-120.5			SILTY SAND, dark gray (2.5Y 4/1) very fine sand, soft to medium stiff, non-plastic, moist with 3/4" SILTY CLAY, high plasticity.
125	3410	ST-SB04-124-125.5			Native at 122 ft. bgs, GRAVELLY CLAY with fine to coarse sand, strong brown (7.5YR 5/6), hard, loose, medium to high plasticity, gravel fine to coarse, gravels up to 2". Apparent soil genesis indicated by trace caliche and possible gypsum.
130	3405	ST-SB04-129-130.5			
135	3400	ST-SB04-134-135.5	CL		Grades very stiff and strong brown (7.5YR 4/6).
140	3395	ST-SB04-139-140.5			Broken gravel clast in spoon sampler shows gravel larger than 2".
145	3390	ST-SB04-144-145.5			Grades very stiff to hard.
150	3385				TD @ 145.5' bgs.
155	3380				
160	3375				



BORING LOG: ST-SB05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/08/2008 12:00 AM
FINISH DATE/TIME: 10/08/2008 12:00 AM

LATITUDE (NAVD27): 973697.599
LONGITUDE (NAVD 27): 308441.899

TOP OF GROUND ELEVATION: 3541.25 A.S.L.

COMMENTS: Soil boring converted to PZ-2008-16.

RIG TYPE: CME 1250 Track Mount
DRILLING METHOD: Auger
SAMPLING METHOD: Auto Hammer, Split Spoon/SPT and GUS Sampler

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
5	3540				SANDY SILT, very soft, gray (2.5Y 6/1) non plastic, very fine to fine sand, moist.
10	3535				
15	3530	ST-SB05-9-11 Gus			
20	3525	ST-SB05-11-12.5			
25	3520	ST-SB05-19-21 Gus			
30	3515	ST-SB05-21-22.5			
35	3510	ST-SB05-30-31.5			SANDY SILT, dark gray (2.5Y 4/1) very soft non plastic, very fine sand, very moist, 1" layer of SILTY CLAY, high plasticity, underlain by SANDY SILT, gray (2.5Y 6/1).
40	3505				
45	3500	ST-SB05-39-41 Gus			1 - 4" layers SANDY SILT, light gray (5Y 7/2) and gray (5Y 6/1) lighter gray, slightly coarse grain.
50	3495	ST-SB05-41-42.5			
55	3490				
60	3485				
65	3480	ST-SB05-60-61.5			SANDY SILT, light gray to gray (5Y 6/1), soft, non plastic. moist and two 1/2" layers of CLAYEY SILT, darker gray (5Y 7/1), medium plasticity.
70	3475				
75	3470				
80	3465				
85	3460	ST-SB05-79-81 Gus			SANDY SILT, light gray (5Y 7/1) soft, moist, no clay layers.
90	3455	ST-SB05-81-82.5			
95	3450	ST-SB05-89-91 Gus	ML		3" layer of SANDY SILT, very fine to fine sand, gray (5Y 5/1) with trace clay and slightly plastic overlain 1" layer of SANDY SILT, light gray, non plastic, overlying layers ranging form 1/2 to 2" of same material.
100	3445	ST-SB05-91-92.5			
105	3440	ST-SB05-99-101 Gus			2" layer of CLAYEY SILT, dark gray (5Y 3/1), very moist, medium plasticity, overlying 1/2 - 3" SANDY SILT, medium stiff, moist, ranging from gray (5Y 5/1) to dark gray (5Y 4/1), bottom 2" are SANDY SILT, very fine to fine sand, light olive gray (5Y 6/2).
110	3435	ST-SB05-101-102.5			
115	3430				
120	3425				
125	3420	ST-SB05-119-120.5			4" layer of SANDY SILT, dark gray (5Y 4/1), moist, nonelasticity, overlying 8" SANDY SILT, very fine to fine sand, light olive gray (5 Y 6/2), stiff, 2" layer SANDY SILT, very dark gray (5Y 3/1), very stiff, very fine sand.
130	3415				
135	3410				
140	3405				



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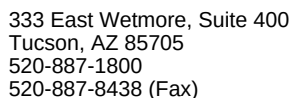
SHEET 2 of 2

BORING LOG: ST-SB05

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/08/2008 12:00 AM
FINISH DATE/TIME: 10/08/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
145	3408	ST-SB05-139-141 Gus	USCS		6" layer of SANDY SILT, light olive gray (5Y 5/2), fine to medium subangular, stiff, moist, 4" layer SANDY SILT, dark gray (2.5Y 4/1) very fine sand, 5" layer SANDY SILT, very fine to fine sand, gray (2.5Y 5/1). 3" layer CLAYEY SILT, gray (2.5Y 6/1), low to medium plasticity, very stiff.
150	3395	ST-SB05-141-142.5			
155	3390				
160	3385				
165	3380	ST-SB05-159-161 Gus			
170	3375	ST-SB05-161-162.5	SM		9" layer SANDY SILT, fine sand, 3" layer CLAYEY SILT, gray (10YR 5/1), slightly moist, very stiff, 6" layer SANDY SILT with trace clay, gray (5Y 5/1), slight plasticity, stiff
175	3370				
180	3365				
185	3360				
190	3355	ST-SB05-185.5-187			
195	3350	ST-SB05-189-191 Gus			
200	3345				
205	3340	ST-SB05-199-201 Gus			
210	3335	ST-SB05-201-202.5			
215	3330				
220	3325				
225	3320				
230	3315				
235	3310				
240	3305				
245	3300				
250	3295	ST-SB05-249-251 Gus			
255	3285	ST-SB05-251-252.5			
260	3280				
265	3275				
270	3270				
275	3265				
280	3260				
285	3255				
290	3250				
295	3245				
300	3245				



DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/21/2008 12:00 AM
FINISH DATE/TIME: 10/28/2008 12:00 AM

TOP OF GROUND ELEVATION: 3535.93 A.S.L.

RIG TYPE: CME 1250 Track Mount
DRILLING METHOD: Auger
SAMPLING METHOD: Split Spoon/SPT and Gus Sampler

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SHEET 2 of 9

BORING LOG: ST-SB06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/21/2008 12:00 AM
FINISH DATE/TIME: 10/28/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3500	ST-SB06-34-36 Gus	SM		brown staining (10yr 5/8), grdes to grey (5yr 6/1) stiff
		ST-SB06-36-37.5			
40	3495				38.0' Alternating layers of sandy silt, grey (5yr 6/1) moderately firm, and light olive grey, very fine grained, hard
45	3490	ST-SB06-44-46 Gus	ML		
		ST-SB06-46-47.5			
50	3485	ST-SB06-49-50.5			
55	3480	ST-SB06-54-55.5	ML		53.0' Prominent layering of silt, grey (5 yr 6/1), very fine; sandy silt light olive grey ((5yr 6/2), fine; and sandy, slit, trace clay, grey (5yr 5/1), very fine
60	3475	ST-SB06-59-61 Gus			
		ST-SB06-61-62.5	CH		62.0' Clay, grey (2.5 yr 6/1) moist, high plasticity, soft
			ML		63.0' Sandy silt, very fine to fine, moderately firm, moist
65	3470	ST-SB06-64-65.5			65.0' Silty sand, dark grey, fine to medium fine, moist, with disseminated pyrite, dark grey (5yr 4/1) and light grey (5yr 7/1)
70	3465	ST-SB06-69-70.5	SM		
75					



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SHEET 3 of 9

BORING LOG: ST-SB06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/21/2008 12:00 AM
FINISH DATE/TIME: 10/28/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
		ST-SB06-74-76 Gus			
80	3460				
		ST-SB06-79-80.5			
85	3455				80.0'
		ST-SB06-84-88 Gus			As above
90	3450				
		ST-SB06-89-93 Gus			
95	3445		SM		
		ST-SB06-94-98 Gus			
100	3440				
		ST-SB06-97-98.5			
105	3435				
		ST-SB06-104-105.5			
110	3430		ML		104.0'
		ST-SB06-109-110.5			Sandy silt, grey (5yr 6/1), very fine grained with layer of silt, dark grey (5yr 4/1), moderately firm, slightly moist
115	3425				
		ST-SB06-114-115.5	CL-ML		109.0'
					Clayey silt, light olive brown, soft, medium plastic, grades to moderately firm, grades to grey (2.5yr 5/1)



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SHEET 4 of 9

BORING LOG: ST-SB06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/21/2008 12:00 AM
FINISH DATE/TIME: 10/28/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3420				
120	3415	ST-SB06-119-120.5			120.0'
125	3410	ST-SB06-124-125.5	ML		
130	3405	ST-SB06-129-130.5			130.0'
135	3400	ST-SB06-134-135.5			
140	3395	ST-SB06-139-140.5			
145	3390	ST-SB06-144-145.5	SM		
150	3385	ST-SB06-149-151 Gus			
		ST-SB06-151.5-153			
155		ST-SB06-154-155.5			



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SHEET 5 of 9

BORING LOG: ST-SB06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/21/2008 12:00 AM
FINISH DATE/TIME: 10/28/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3380				
160		ST-SB06-159-160.5			160.0'
	3375		SM		Wet
165		ST-SB06-164-165.5			165.0'
	3370				Silty sand, light olive grey (5yr 6/2), with layers of grey (5yr 5/1) and dark grey (5 yr 4/1), soft to very firm, very fine to medium grained, slightly moist
170		ST-SB06-169-170.5			
	3365				
175		ST-SB06-174-175.5			
	3360				
180		ST-SB06-179-180.5			
	3355				
185		ST-SB06-184-185.5	SM		
	3350				
190		ST-SB06-189-190.5			
	3345				
195		ST-SB06-194-195.5			



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SHEET 6 of 9

BORING LOG: ST-SB06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/21/2008 12:00 AM
FINISH DATE/TIME: 10/28/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3340				
200	3335	ST-SB06-199-201 Gus			
		ST-SB06-201-202.5			
205	3330	ST-SB06-204-205.5			205.0' As above
210	3325	ST-SB06-209-210.5			
215	3320	ST-SB06-214-215.5	SM		
220	3315	ST-SB06-219-220.5			
225	3310	ST-SB06-224-225.5			224.0' Sandy silt, grey (2.5yr 5/1), to dark grey (5yr 4/1), very fine, soft to very firm; with layers of silty sand, grey (2.5yr 5/1), very fine, firm to moderately firm, and silty clay, dark grey (5yr 4/1), medium to high plasticity, all slightly moist
230	3305	ST-SB06-229-230.5			
235		ST-SB06-234-235.5	ML		



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SHEET 7 of 9

BORING LOG: ST-SB06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/21/2008 12:00 AM
FINISH DATE/TIME: 10/28/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3300				
240		ST-SB06-239-240.5			240.0'
	3295				As above
245		ST-SB06-244-245.5			
	3290				
250		ST-SB06-249-251 Gus			
	3285				
		ST-SB06-251-252.5			
255			ML		
	3280				
260		ST-SB06-259-260.5			
	3275				
265		ST-SB06-264-265.5			
	3270				
270		ST-SB06-269-270.5			270.0'
	3265				As above
275		ST-SB06-274-275.5			



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SHEET 8 of 9

BORING LOG: ST-SB06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/21/2008 12:00 AM
FINISH DATE/TIME: 10/28/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3260		ML		
280	3255	ST-SB06-279-280.5			280.0' As above
285	3250	ST-SB06-284-285.5			
290	3245	ST-SB06-289-290.5	ML		
295	3240	ST-SB06-294-295.5			
300	3235	ST-SB06-300-302 Gus			302.0'
305	3230	ST-SB06-304-305.5	SW		Well graded sand with gravel, red grey (5yr 4/2), with layers of red brown (2.5 yr 6/4) and yellow brown (10yr 5/8), very dense, iron -oxide staining, moist
310	3225	ST-SB06-309-310.5	SP-SC		306.0' Poorly graded sand with clay trace gravel, red brown (2.5yr 4/4) to red grey (5yr 4/2), very dense, low plasticity, moist to wet
315		ST-SB06-314-315.5			315.0'



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SHEET 9 of 9

BORING LOG: ST-SB06

PROJECT: Voluntary Remediation Program
CLIENT: FMI
LOCATION: Sierrita
URS PROJECT #: 24096838

DRILLING CONTRACTOR: Yellow Jacket
DRILLER: Joe Lagana
LOGGED BY: Mark Sollman
START DATE/TIME: 10/21/2008 12:00 AM
FINISH DATE/TIME: 10/28/2008 12:00 AM

DEPTH BELOW SURFACE (FT)	ELEVATION (FT)	SAMPLE COLLECTED (Identification)	USCS	GRAPHIC	LITHOLOGIC DESCRIPTION AND REMARKS
	3220				As above
320	3215	ST-SB06-319-320.5	SP-SC		
325	3210	ST-SB06-324-325.5			
330	3205				
335	3200				
340	3195				
345	3190				
350	3185				
355					