

APPENDIX B
MONITORING WELL INSTALLATION LOGS

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Appendix B Monitoring Well Installation Logs

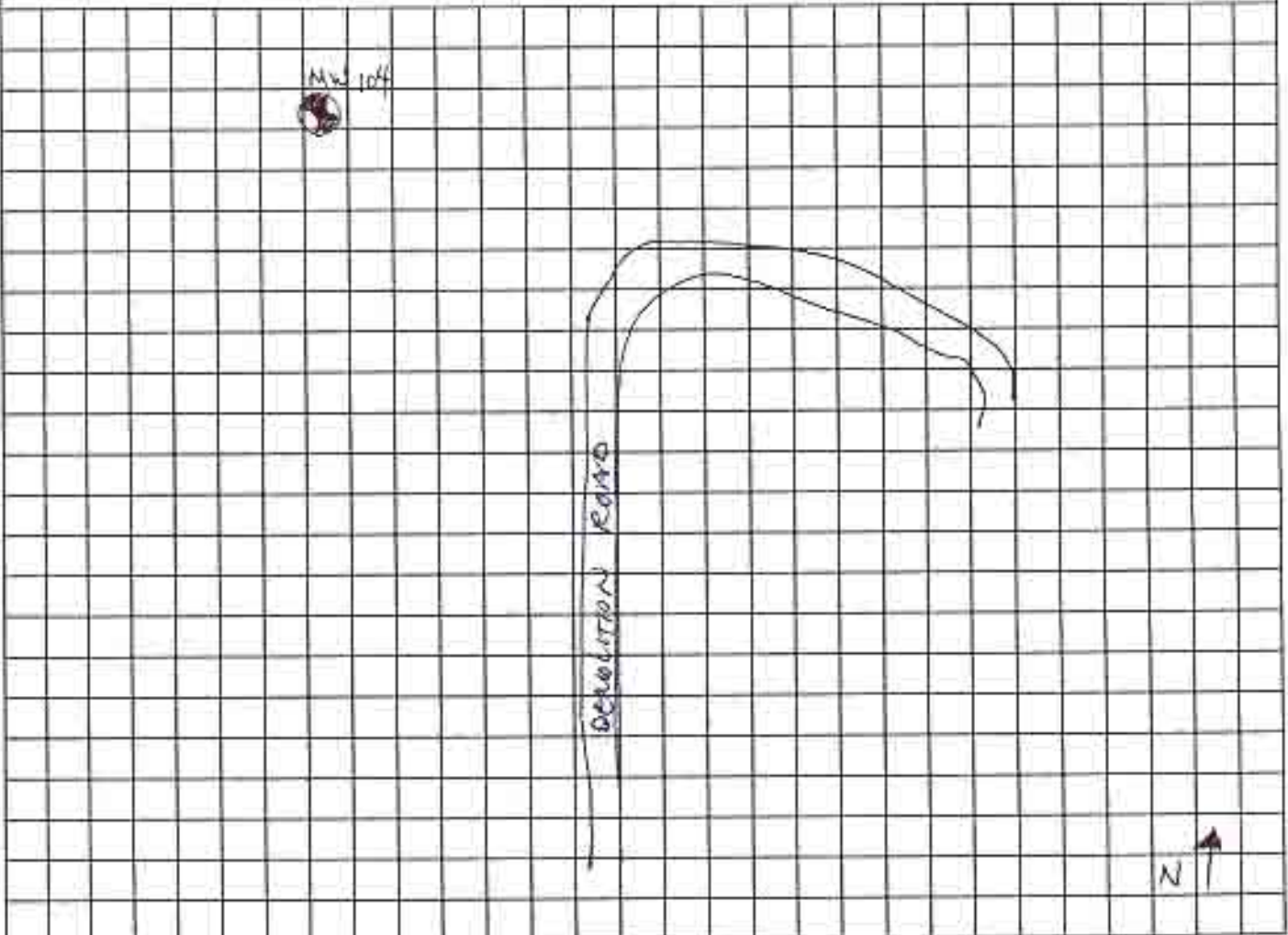
Sampling Site number	Page Number
DA2-104	5
DA2-105	11
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HTRW DRILLING LOG		DISTRICT Louisville		HOLE NUMBER MW-104	
1. COMPANY NAME Spec Pro, Inc.		2. DRILL SUBCONTRACTOR Toltast, Inc.		SHEET 1 of 4	
3. PROJECT DEMO AREA 2 PHASE II RE			4. LOCATION DEMO AREA 2		
5. NAME OF DRILLER Bob Gollinwe			6. MANUFACTURERS DESIGNATION OF DRILL CME 75		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT CME 75, 4 1/4" hollow stem auger, 2' x 2" in Split spoon samplers, 3" Shelby tube		8. HOLE LOCATION SEE MAP BELOW			
12. OVERBURDEN THICKNESS 27.0'			9. SURFACE ELEVATION 1070.82		
13. DEPTH DRILLED INTO ROCK 0'			10. DATE STARTED 07/14/02		
14. TOTAL DEPTH OF HOLE 27.0'			11. DATE COMPLETED 07/16/02		
18. GEOTECHNICAL SAMPLES 24-26		DISTURBED		19. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS OB07, OB08		VOC		OTHER (SPECIFY)	
21. DEPOSITION OF HOLE		MONITORING WELL		OTHER (SPECIFY)	
		✓		✓	
				23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	
				24. TOTAL CORE RECOVERY	

LOCATION SKETCH/COMMENTS

SCALE: NOT TO SCALE



HTRW DRILLING LOG

DAZ

HOLE NUMBER 104

PROJECT: DAZ PH 2 RI. RWAPP

INSPECTOR S. McCauslin

SHEET 2 OF 4

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEO TECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Yellowish brn silt, M _U with organics 10YR 5/4, dry, loose grades to a brown silty clay. 10YR 5/3 with gray mottling, very stiff, moist. Some fine gravel, non plastic, CL			0-2' DAZ MW 104-DB07	Blow Counts 5, 8, 7, 7 Recovery 1.9/2 time 1440
		As above, trace of coarse angular gravel. CL			2-4' DAZ MW 104-DB08	B.C. 8, 12, 15, 15 Recovery 1.7/2 time 1443
		As above color change to dk yellowish brown 10YR 5/4 CL				BC 5, 5, 6, 7 Recovery 2/2 time 1455
		As above; CL				BC 11, 12, 8, 8 Recovery 2/2 time 1459
		Trace of Red mineral staining at 7.9' CL				BC 12, 12, 12, 12 Recovery 2/2 Time 1507
		Dk yellow Brown 10YR 4/4 fine to med sand layer, well sorted, loose, moist SW				

21

HTRW DRILLING LOG						DAZ	HOLE NUMBER 104
PROJECT: DAZ PHZ RI R02AP			INSPECTOR S McCushin			SHEET 3 OF 4	
ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEDTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (E)	REMARKS (G)	
		yellowish brown eye 5/6 fine grained sand, well sorted, very loose, moist SW				BC 9, 9, 11, 14 Recovery Time 1513	
		AS ABOVE SW				BC 5, 9, 11, 12 Recovery 2/2 Time 1520	
		layer of silt, well sorted, loose, moist ML fine sand as above, color changes slightly to grayish brown, ^{SW} trace fine gravel loose, moist, SW				BC 5, 7, 8, 8 Recovery 2/2 time 1523	
		AS ABOVE TO 16.4 feet				BC 8, 10, 11, 12 Recovery 1.5/2 time 1532	
		Silt, well sorted, DK yellow brn loye 4/4, loose, moist grading to very moist (wet) rapid dilatancy. ML				BC 5, 5, 6, 7 Recovery 1.5/2 Time 1537 Water at 18.2'	
		AS ABOVE, saturated at 18.2 ft to 19.1 ft. ML					
		clayey silt, wet brwn, 10 yr 4/3, soft, non plastic. ML					

HTRW DRILLING LOG

DAZ

HOLE NUMBER 104

PROJECT: DAZ PH2 RI RJAAP

INSPECTOR: S McCauslin

SHEET 4 OF 4

DEPTH (ft)	DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	HEADSPACE SCREENING RESULTS	GEOCHEM SAMPLE OR CODEBOOK	ANALYTICAL SAMPLE NO. (ft)	REMARKS (ft)
	21	Fine dk yellowish brown sand, 104R4/4, well sorted, loose, wet SW				BC 8,8,7,9 Recovery 2/2 Time 1550
	22	clayey silt, wet, brown, 104R4/3 soft, non plastic ML				
	23	Silty clay, brown 104R4/3 with some fine gravel, wet, grading to a fine clayey silt same color saturated at 22.8 ft ML				BC 8,8,8,8 Recovery 2/2 Time 1600
	24	back to asilty clay as above, soft, non plastic, moist ML				
	25			Shelby tube sample No. 042mw 104-0809		
	26			@1655		Recovery on Shelby = 10"
	27	Bottom of hole Shelby				Advance hole to 27' with auger
	28					
	29					

MONITORING WELL INSTALLATION LOG

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI

DELIVERY ORDER: 0003

MONITORING WELL ID: DA2MUL104

INSTALLATION START DATE: 07-16-02 TIME: 1700

INSTALLATION FINISH DATE: 07-16-02 TIME: 1743

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 SAND QUANTITY: 6-50 lb Bags

BENTONITE SEAL: TYPE: Wokkey 3/8" pellets QUANTITY: 1 and 1/4 50 lb bucket

GROUT: TYPE: CEMENT/BENTONITE QUANTITY: 49 Lbs.

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Machine Cut

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 SAND

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Threaded PVC

CENTRALIZERS DESIGN AND COMPOSITION: None

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

None

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES NO

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES NO

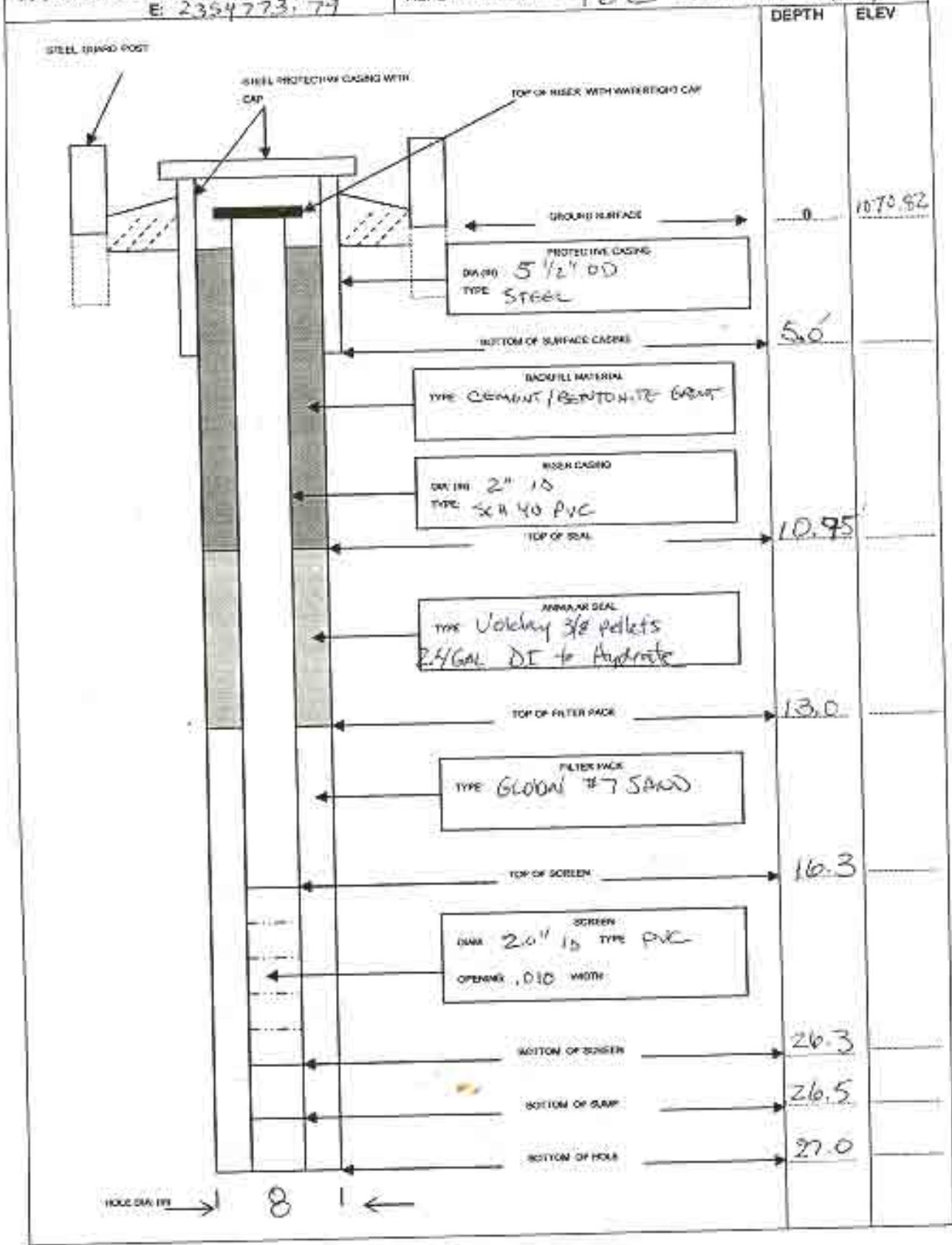
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the complete well? YES NO

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: N/A

RECORDED BY: [Signature] 7/16/02 QA CHECK BY: _____
(Signature and Date) (Signature and Date)

MONITORING WELL CONSTRUCTION DIAGRAM

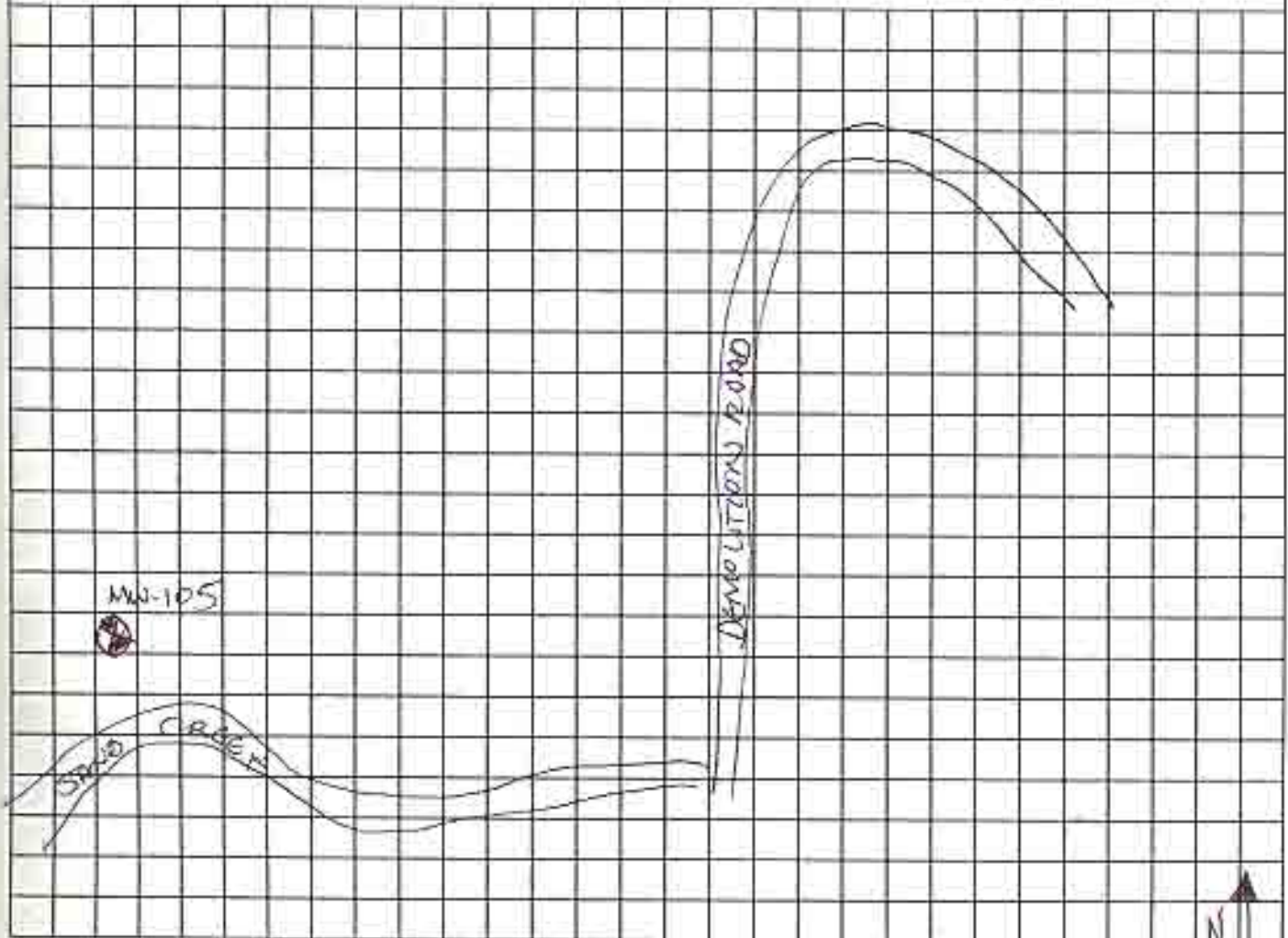
PROJECT NAME: Ravenna Demolition Area 2 Phase II RI		DELIVERY ORDER NO: 0003
WELL NUMBER: DAZ MW-104	BEGIN: 7-16-02	END: 7-16-02
COORDINATES: N: 561124.54 E: 235477.37	REFERENCE POINT: TOC	ELEVATION: 1073.89



HTRW DRILLING LOG		DISTRICT: <u>Louisville</u>		HOLE NUMBER: <u>MW-105</u>	
1. COMPANY NAME: <u>Spec Pro, Inc</u>		2. DRILL SUBCONTRACTOR: <u>TOITEST, Inc</u>		PAGE: <u>1</u> of <u>3</u>	
3. PROJECT: <u>DEMO AREA 2 PHASE II RE</u>			4. LOCATION: <u>SEE DEMO AREA 2</u>		
5. NAME OF DRILLER: <u>Bob Gollhue</u>			6. MANUFACTURERS DESIGNATION OF DRILL: <u>CME 75</u>		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: <u>2' x 2" 10 Split Spoon Samplers</u>		8. HOLE LOCATION: <u>SEE MAP BELOW</u>		9. SURFACE ELEVATION: <u>1042.66</u>	
12. OVERBURDEN THICKNESS: <u>14.0'</u>		15. DEPTH GROUNDWATER ENCOUNTERED: <u>9.3'</u>		10. DATE STARTED: <u>07-17-02</u>	
13. DEPTH DRILLED INTO ROCK: <u>0'</u>		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: <u>1:00' bgs 23hrs</u>		11. DATE COMPLETED: <u>07-17-02</u>	
14. TOTAL DEPTH OF HOLE: <u>14.0'</u>			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):		
18. GEOTECHNICAL SAMPLES: <u>None</u>		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES:	
20. SAMPLES FOR CHEMICAL ANALYSIS: <u>DB11, DB17</u>		VOC	METALS	OTHER (SPECIFY): <u>Explosives</u>	OTHER (SPECIFY):
22. DISPOSITION OF HOLE:		BACKFILLED	MONITORING WELL	OTHER (SPECIFY):	21. TOTAL CORE RECOVERY: <u>✓</u>
				23. SIGNATURE OF INSPECTOR: <u>[Signature]</u>	

LOCATION SKETCH/COMMENTS

SCALE: NOT TO SCALE



HTRW DRILLING LOG

DAZ

HOLE NUMBER/OS

PROJECT: DAZ PH2 RI R/VAP

INSPECTOR S McCauslin

SHEET 2 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		dark yellowish brown 10YR 3/4, silty clay with organics, with a trace of fine gravel. medium stiff non plastic, moist color grades to a yellowish brown silty clay with grey mottling firm, moist here plastic slightly ML	Breath Zone FLO 3.15		0-2' DAZMW 105-0811	BC 1.3/2 3,4,5 Blow Count time 10:10
		as above to 3 ft.	Breath Zone 2.61		2-4' DAZMW- 105-0812	BC 3,3,4,5 Recovery 1.7/2 time 10:15
		olive grey 5YR 5/2 clay, trace of gravel soft, plastic, moist, CL				time 10:15
		as above to 4.5 ft. olive brown sand fine to medium grain, loose, wet SM				5,5,5,6 BC Recovery 1.2/2 time 10:20 FB
		as above to 6.3 ft. color change to dark grey 2.5YR 1, fine grain to medium, trace of clay loose and wet. SC				9,7,9,10 BC Recovery 1.8/2 time 10:23
		as above to 8.2 ft. dark grey clay, 2.5YR 1, trace of fine gravel, stiff slightly plastic, moist CL				BC 6,8,8,10 Recovery 1.9/2 water at 9.3'
		olive gray 5.0YR 5/2, fine to medium gray sand, fine, loose, wet SM dark gray, gravel as above, clay CL				10:32 time

MONITORING WELL INSTALLATION LOG

48

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI

DELIVERY ORDER: 0003

MONITORING WELL ID: DAZ.MW.105

INSTALLATION START DATE: 07-17-02 TIME: 3M 1335

INSTALLATION FINISH DATE: 07-17-02 TIME: 1405

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 SAND QUANTITY: 4-50 lb Bags

BENTONITE SEAL: TYPE: White clay 3/8" pellets QUANTITY: 1-50lb Bucket

GROUT: TYPE: CEMENT/BENTONITE QUANTITY: 49 lbs

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Machine cut

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch-40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 SAND

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: None Threaded PVC

CENTRALIZERS DESIGN AND COMPOSITION: NONE USED

DESCRIPTION OF PROTECTIVE CASING

NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

Fines filled borehole and impeded sand emplacement. Hole flushed w/ approved potable water, discharged water collected in drum # DAZ.MW.105-001.

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES NO []

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES NO []

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the complete well? YES NO []

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: NA

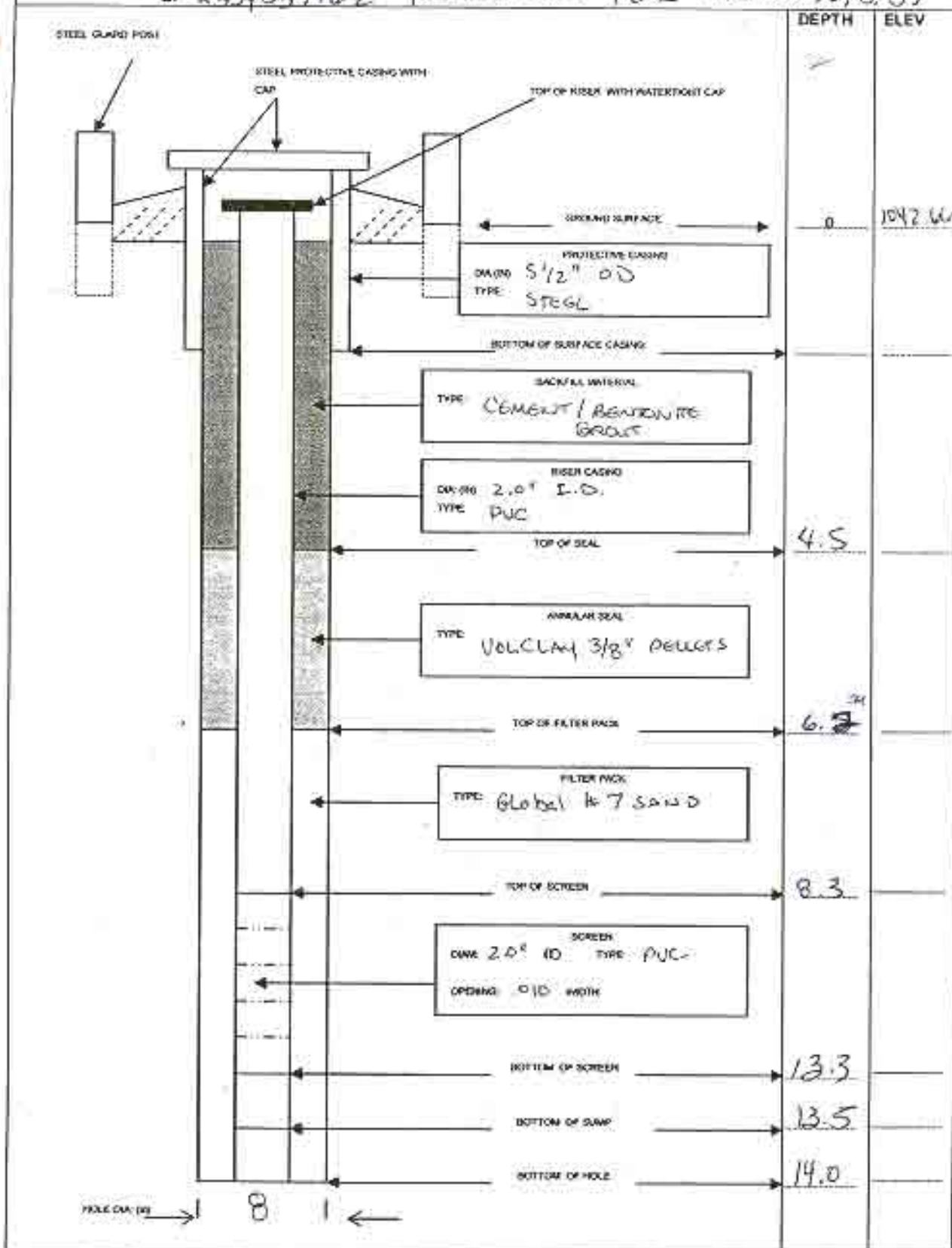
RECORDED BY: SMcCoy 7-17-02 QA CHECK BY: _____
(Signature and Date) (Signature and Date)

MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

WELL NUMBER: DA2 MW 105 BEGIN: 07-17-02 END: 07-17-02

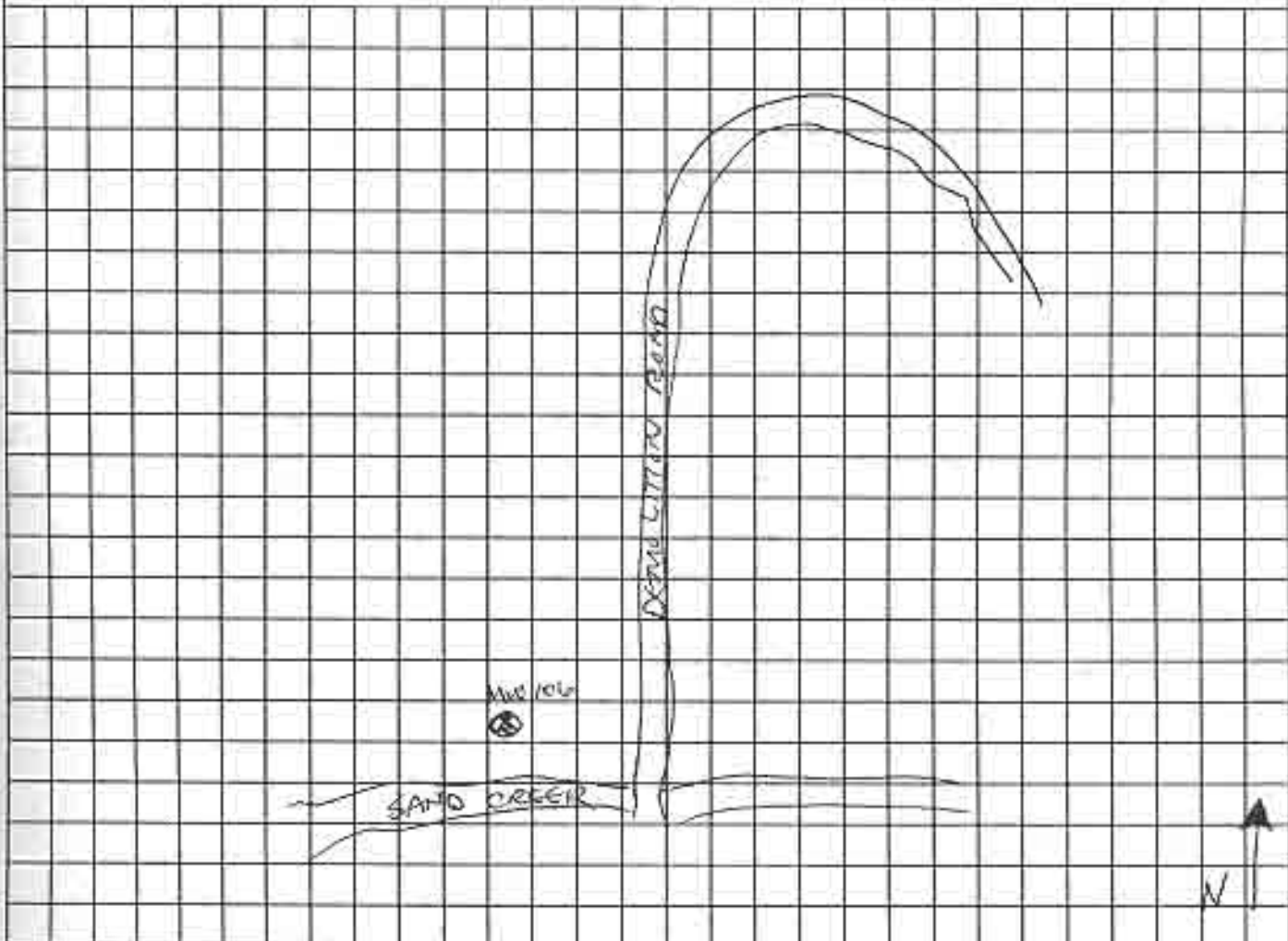
COORDINATES: N: 560572.50 REFERENCE POINT: TOC ELEVATION: 1045.34
 E: 2354557.62



HTRW DRILLING LOG		DISTRICT: <u>Louisville</u>		HOLE NUMBER: <u>MW-106</u>	
1. COMPANY NAME: <u>Spec Pro, Inc.</u>		2. DRILL SUBCONTRACTOR: <u>TOLTEST, INC.</u>		SHEET <u>1</u> OF <u>3</u>	
3. PROJECT: <u>DEMO AREA 2 PHASE II RI</u>			4. LOCATION: <u>DEMO AREA 2</u>		
5. NAME OF DRILLER: <u>Bob Gillman</u>			6. MANUFACTURERS DESIGNATION OF DRILL: <u>CME 75</u>		
7. SIZES AND TYPES OF DRILL LINE AND SAMPLING EQUIPMENT: <u>2' x 2 1/2" 10 Split Spoon Samplers</u>		8. HOLE LOCATION: <u>SEE MAP BELOW</u>		9. SURFACE ELEVATION: <u>1041.19</u>	
12. OVERBURDEN THICKNESS: <u>10.6'</u>		10. DATE STARTED: <u>07-17-02</u>		11. DATE COMPLETED: <u>07-18-02</u>	
13. DEPTH DRILLED INTO ROCK: <u>Spoils down 54' in weathered shale</u>		14. TOTAL DEPTH OF HOLE: <u>16.0'</u>		15. DEPTH GROUNDWATER ENCOUNTERED:	
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: <u>NO WATER - 24 HOURS</u>		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):			
18. GEOTECHNICAL SAMPLES: <u>None</u>		DISTURBED		UNDISTURBED	
19. SAMPLED FOR CHEMICAL ANALYSIS: <u>DB15, DB16</u>		NOG		METALS	
20. DISPOSITION OF HOLE:		BACKFILL		MONITORING WELL	
				OTHER (SPECIFY): <u>Explosives</u>	
				21. TOTAL CORE RECOVERY: %	
				22. SIGNATURE OF INSPECTOR: <u>[Signature]</u>	

LOCATION SKETCH/COMMENTS

SCALE: NOT TO SCALE



HTRW DRILLING LOG

DAZ

HOLE NUMBER 106

PROJECT: DAZ #12 RE XMAP

INSPECTOR S McCauslin

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEO TECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		Dark brown 10yr 3/3 Silt, some fine gravel, organics, soft, moist MC			0-2' DAZ MW 106-0815	Blow count 2,3,2,2 Recovery 2/2
		same color 10yr 3/3, Silty, clay, soft, moist CL				time 15:10
		increasing stiffness with depth. dark brown clay 10yr 4/3 gray nodules, New plastic, organics CL				
		as above down to 3ft. color grades to dark yellowish brown with gray nodules, slightly plastic to plastic, moist CL			2-4' DAZ MW 106-0816	BC 3,5,5,5 Recovery 1.3/2 time: 15:15
		as above with some gravel, moist, soft, plastic CL				BC 1,1,2,1 Recovery 1.2/2 time: 15:20
		as above to 6 1/2 ^{feet} feet				BC 2,2,4,8 Recovery 1.7/2 time: 15:25
		gray 5y5/1, clay, trace of fine gravel, soft moist, plastic with brown nodules. Trace of red mineral staining CL				time: 15:25 Blow count 12,27,36,42 Recovery 2/2 WET at 8.5'
		yellowish brown 10yr 0/6 fine grain sand, well sorted trace of gravel color grades to a grayish brown 10yr 0/2 5c moist, moist to wet gray clay with brown mottles, shiff. moist, fine laminated layers CL				time: 15:35
		weathered shale, dark gray 10yr 4/1				

HTRW DRILLING LOG

DAZ

HOLE NUMBER 106

PROJECT: DAZ P42 R1 R1AAP

INSPECTOR

SHEET 3 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Yellowish brown 104R silt above, fine to medium grain sand poorly sorted, moist, loose SC weathered shale, gray, finely laminated, soft, moist				Blow count 15, 22, 29, 50/4 Recovery 2/2 time: 15:45
	12	as above				Blow count 12, 19, 22, 23 Recovery 2/2 time: 15:55
	14	as above				Blow count: 18, 20, 22, 26 Recovery - 1.5/2 time: 16:04
	15		Borehole FID. READING 1.89			
	16	Bottom of hole - 16.0'		<i>Stratigraphic</i>		
	17					
	18					
	19					
	20					

MONITORING WELL INSTALLATION LOG

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI

DELIVERY ORDER: 0003

MONITORING WELL ID: MCO 106

INSTALLATION START DATE: 07-18-02 TIME: 0823

INSTALLATION FINISH DATE: 07-18-02 TIME: 0850

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 SAND QUANTITY: 5-50 lb Bags
BENTONITE SEAL: TYPE: Volclay 3/8" pellets QUANTITY: 1/2 - 50 lb. Bucket
GROUT: TYPE: CEMENT BENTONITE QUANTITY: 50 lb

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): 0010 SLOT CONFIGURATION: Machine cut
OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"
SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC
MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 SAND

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"
SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC
MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Non-Threaded PVC

CENTRALIZERS DESIGN AND COMPOSITION: NONE USED

DESCRIPTION OF PROTECTIVE CASING

NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

NONE

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES NO

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES NO

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the complete well? YES NO

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: N/A

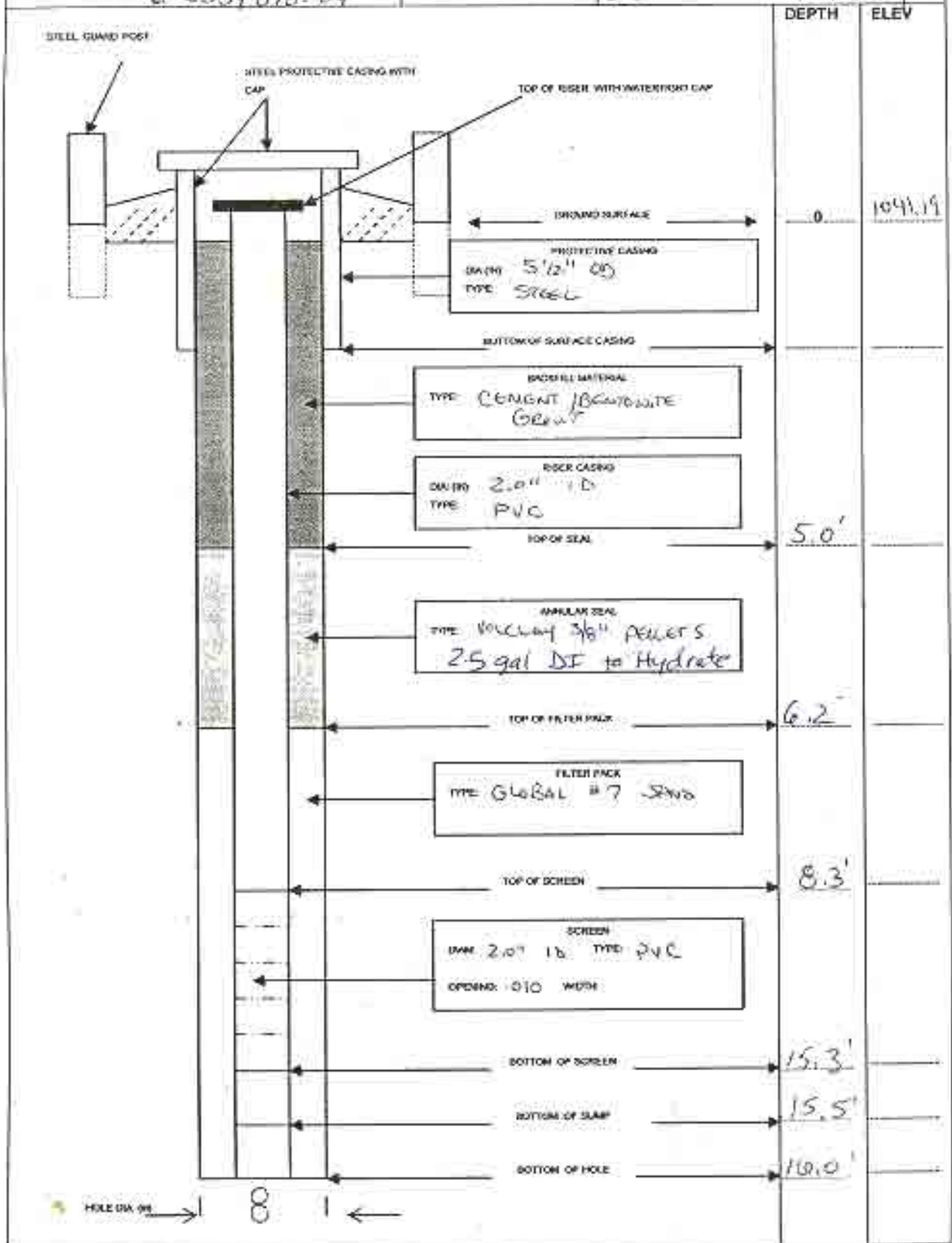
RECORDED BY: [Signature] 7/18/02 QA CHECK BY: _____
(Signature and Date) (Signature and Date)

MONITORING WELL CONSTRUCTION DIAGRAM

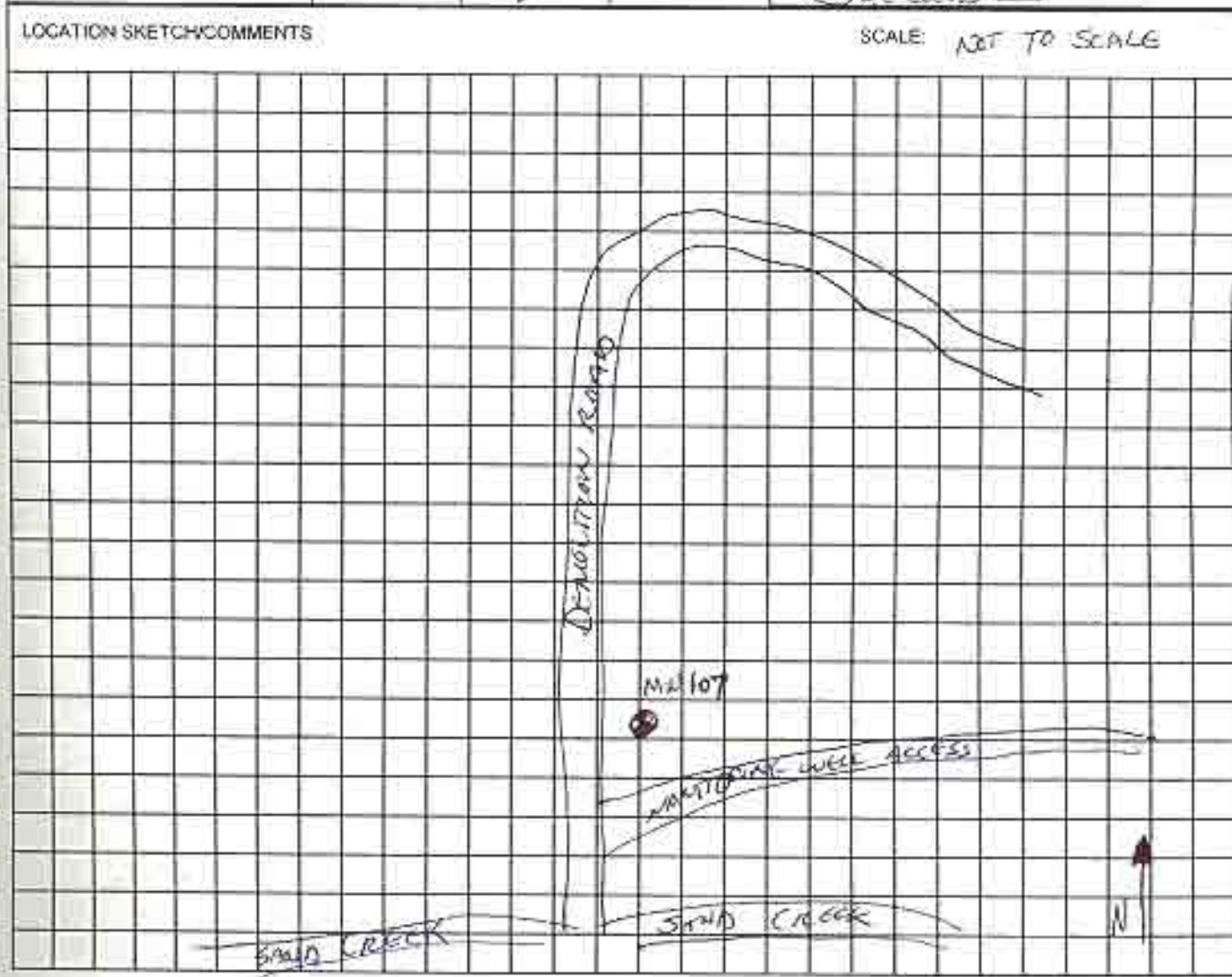
PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

WELL NUMBER: DAZMLW106 BEGIN: 07-18-02 END: 07-18-02

COORDINATES: N: 560560.19 REFERENCE POINT: TOC ELEVATION: 1043.79
 E: 2354848.84



HTRW DRILLING LOG		DISTRICT: <u>Louisville</u>		HOLE NUMBER <u>MW107</u>	
1. COMPANY NAME: <u>Spec PRO, Inc.</u>		2. DRILL SUBCONTRACTOR <u>TOITEST, INC.</u>		SHEET <u>1 of 3</u>	
3. PROJECT: <u>DEMO AREA 2 PHASE II R.I.</u>			4. LOCATION: <u>DEMO AREA 2</u>		
5. NAME OF DRILLER <u>Bob Gallimore</u>			6. MANUFACTURERS DESIGNATION OF DRILL <u>CME 75</u>		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT <u>2" x 2" in Solid Spoca Samplers</u> <u>2' x 3" in Shelby Tube</u>		8. HOLE LOCATION <u>SEE MAP BELOW</u>		9. SURFACE ELEVATION <u>1039.18</u>	
12. OVERBURDEN THICKNESS <u>120'</u>			15. DEPTH GROUNDWATER ENCOUNTERED <u>9.0'</u>		
13. DEPTH DRILLED INTO ROCK <u>Augered to 15' - Approx 3' in shale</u>			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: <u>7.67' 24 hours</u>		
14. TOTAL DEPTH OF HOLE <u>15'</u>			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):		
18. GEOTECHNICAL SAMPLES <u>10-12'</u> <u>12-14'</u>		DISTURBED		UNDISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS <u>0-2', 2-4'</u>		VOO		METALS	
22. DISPOSITION OF HOLE		SACFILLED		MONITORING WELL	
		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
				19. TOTAL NUMBER OF CORE BOXES	
				OTHER (SPECIFY):	
				OTHER (SPECIFY):	
				OTHER (SPECIFY):	
				21. TOTAL CORE RECOVERY %	
				23. SIGNATURE OF INSPECTOR <u>Eric Causel</u>	



HTRW DRILLING LOG

DAZ

HOLE NUMBER 107

PROJECT: DAZ PH2 RE RUMP

INSPECTOR McCauslin

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		yellowish brown 10YR 5/4 silty clay with gravel, some organics very loose to 1.7 ft stiff at 1.7, with increasing clay, content on ML			Sample 820 189 sm	Blow count 8, 10, 12, 12 Recovery 2/2 some large rock/slag and roots time 0955
		as above clay 10YR 4/4 dark yellow brown with fine gravel, stiff, trace of organics, red mineral stains, moist CL			Sample 821 1820 sm	Blow count 5, 5, 4, 4 Recovery 1.7/2 time 1003
		as above, moist, soft slightly plastic, with a trace of gray mottles, CL				BC 1, 2, 3, 3 Recovery 1.6/2 time 1008
		as above, CL				BC 1, 2, 3, 4 Recovery .6/2 time 1015
		dark gray 10YR 4/1, soft, plastic clay CL gray 10YR 5/2 fine to medium grained with a trace of fine to medium gravels, wet, loose SF+ SC				BC 5, 6, 8, 9 Recovery 1.3/2 Saturated at 9' time 1019
		Increasing large gravel some red mottles				

HTRW DRILLING LOG

DAZ

HOLE NUMBER 107

PROJECT: DAZ A2 RE RIAPD

INSPECTOR: S McCauslin

SHEET 3 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO IF1	REMARKS (D)	
	11	Wet from the end, gray clay w/ gravel cl		shelby tube		Blow count - N/A Recovery - full	
	12	Weathered shale, wet at end of Shelby tube		shelby tube		time 1040 Recovery 1.1'	
	14					time 1120	
	15	Bottom of hole McCauslin	BT Z.109 FID			Auger to 15' to set well	
	16						
	17						
	18						
	19						
	20						

20-21-60
09-12-02

MONITORING WELL INSTALLATION LOG

92

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI

DELIVERY ORDER: 0003

MONITORING WELL ID: DAZ MW 107

INSTALLATION START: DATE: 07-18-02 TIME: 1126

INSTALLATION FINISH: DATE: 7-18-02 TIME: 1153

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 SAND QUANTITY: 4 - 50 lb BAGS
BENTONITE SEAL: TYPE: Volclay 3/8" pellets QUANTITY: 1 - 50 lb Bucket
GROUT: TYPE: CEMENT/BENTONITE QUANTITY: 49 lbs

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Machine Cut
OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"
SCHEDULE/THICKNESS: SCH 40 COMPOSITION: PVC
MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 SAND

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"
SCHEDULE/THICKNESS: SCH 40 COMPOSITION: PVC
MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Threaded PVC

CENTRALIZERS DESIGN AND COMPOSITION: NONE USED

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

None

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES NO

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES NO

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the complete well? YES NO

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: _____

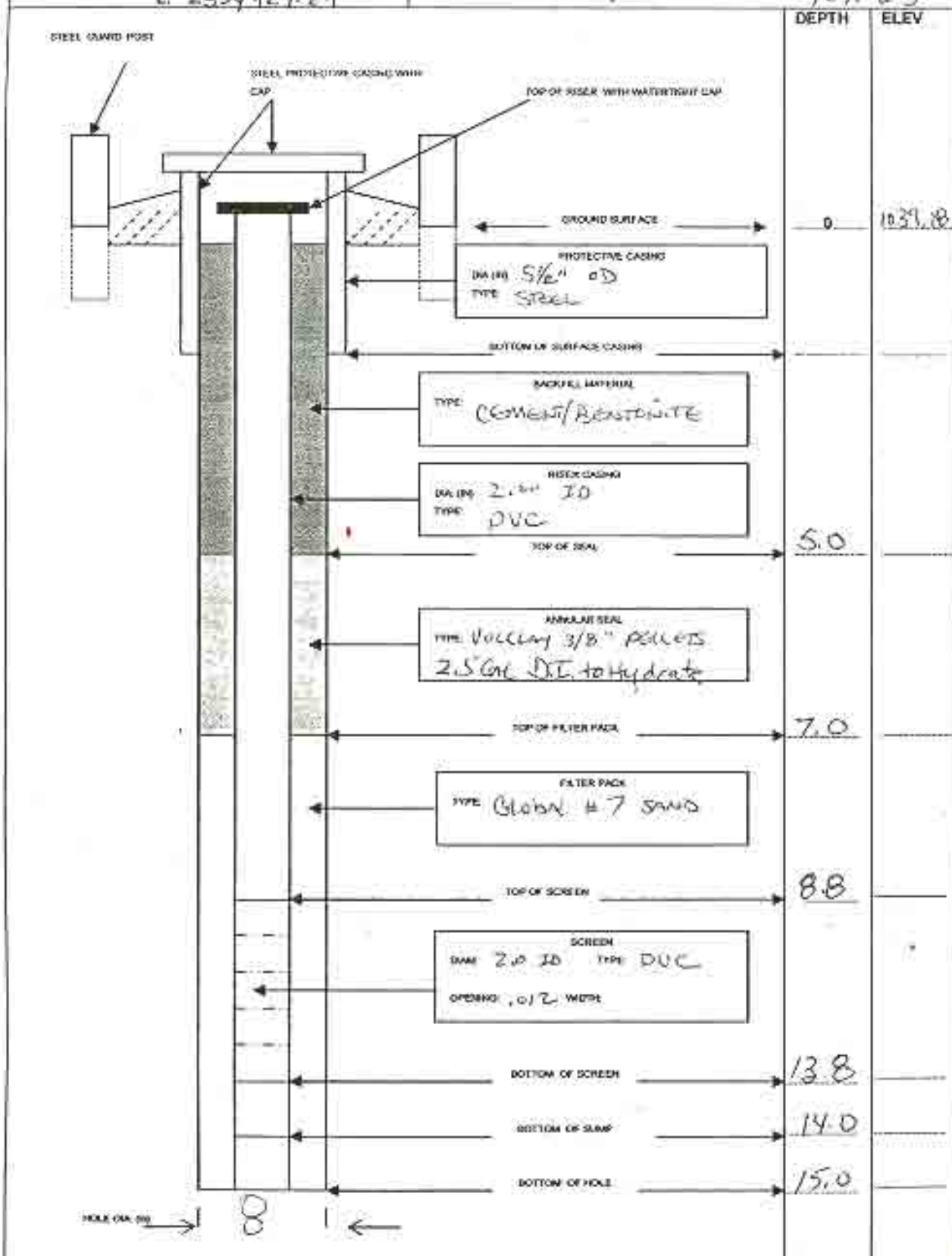
RECORDED BY: [Signature] 7/18/02 DA CHECK BY: _____
(Signature and Date) (Signature and Date)

MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

WELL NUMBER: DAZ MW 107 BEGIN: 07-18-02 END: 07-18-02

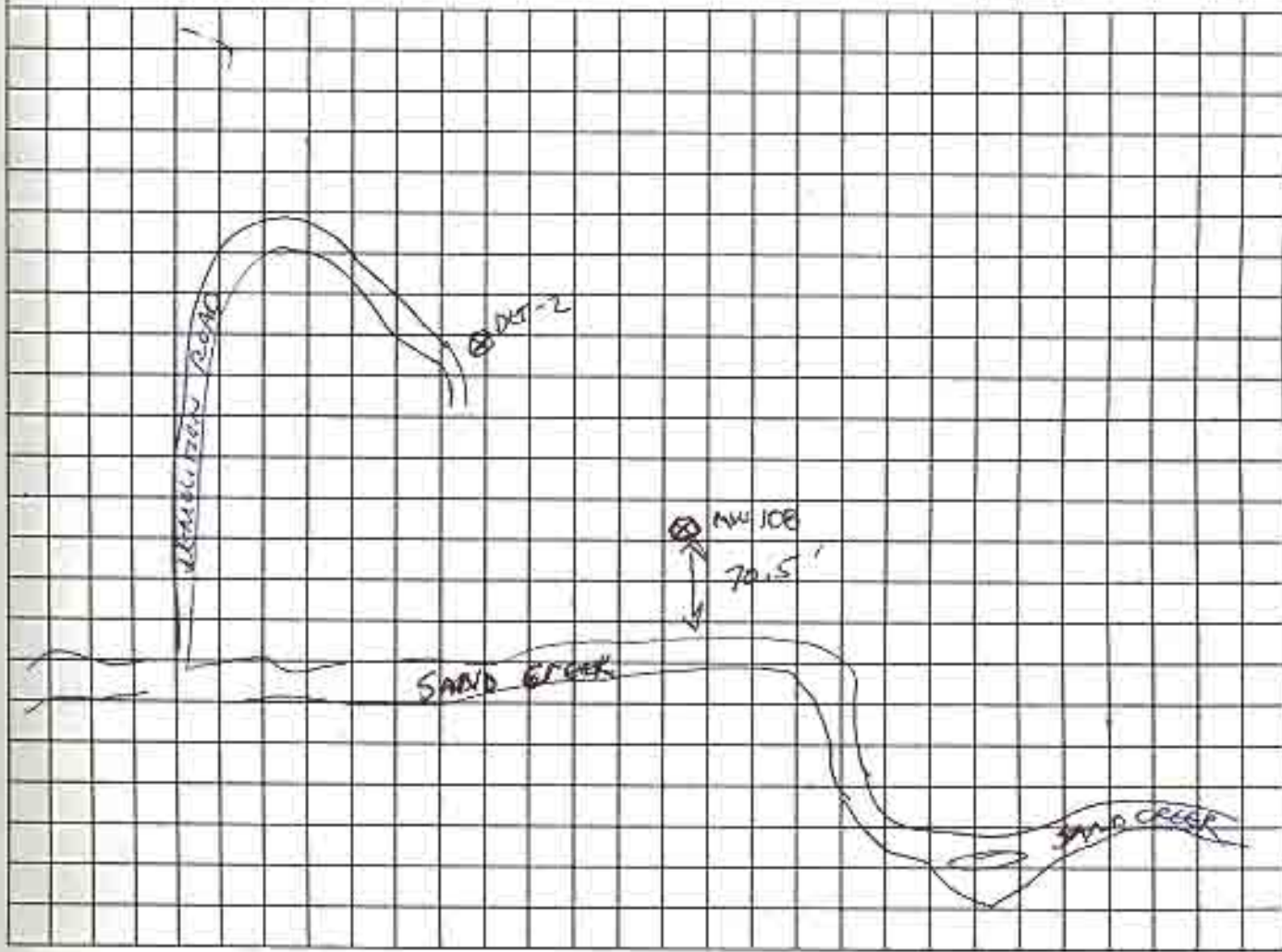
COORDINATES: N: 560878.480 .04 REFERENCE POINT: TOC ELEVATION: 1041.63
 E: 2354924.29



HTRW DRILLING LOG		DISTRICT <u>Louisville</u>		HOLE NUMBER <u>MW108</u>	
1. COMPANY NAME <u>Spec Pro Inc.</u>		2. DRILL SUBCONTRACTOR <u>Toitost</u>		SHEET <u>1</u> of <u>3</u>	
3. PROJECT <u>Demo Area 2- Phase II RT</u>			4. LOCATION <u>DAZ - MW108</u>		
5. NAME OF DRILLER <u>Bob Golt, hire Toitost Inc</u>			6. MANUFACTURERS DESIGNATION OF DRILL <u>CME 75</u>		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT <u>CME 75 USING</u> <u>4 1/4" HSAugers</u>		8. HOLE LOCATION			
<u>2' 2" id. split spoon samples</u> <u>3' x 3" id. Shelby Tube</u>		9. SURFACE ELEVATION <u>1029.92</u>			
12. OVERBURDEN THICKNESS <u>3.5'</u>		10. DATE STARTED <u>07-16-02</u>		11. DATE COMPLETED <u>07-16-02</u>	
13. DEPTH DRILLED INTO ROCK <u>Augered hole to 15' - 11.5' into shale</u>		15. DEPTH GROUNDWATER ENCOUNTERED: <u>4.5'</u>			
14. TOTAL DEPTH OF HOLE <u>15'</u>		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED.			
		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) <u>6.15</u> <u>24 hours</u>			
18. GEOTECHNICAL SAMPLES <u>NONE</u>		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES		20. SAMPLES FOR CHEMICAL ANALYSIS <u>0-2' 2-4'</u>		21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		23. SIGNATURE OF INSPECTOR <u>S. Michael</u>		24. OTHER (SPECIFY)	
		25. OTHER (SPECIFY)		26. OTHER (SPECIFY)	

LOCATION SKETCH/COMMENTS

SCALE: NOT TO SCALE



HTRW DRILLING LOG

DAL

HOLE NUMBER ^{MY} 108

PROJECT: Yolo 2 PHASE II RT R/APP

INSPECTOR: S. Mc Casler

SHEET 2 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		Dark brown 10yr 3/3 silty clay with trace organics, very soft, grading to a tighter brown 10yr 5/6 silty clay, med stiff, moist, non plastic ML	FID 4.29		0-2' sample @ 0842 #823	Blow Counts 55, 8, 12 Recovery 2/2
		yellowish brown 10yr 5/6 silt with clay, trace gravel and some sand, soft, moist SC				
		Gray 10yr 6/1 clay, med stiff, with brown mottling, moist, non-plastic CL				
		AS above, grading to weathered gray shale with iron staining, 10yr 4/1 stiff, dry, some gravel.			2-4' sample @ 0850 #824	Blow counts 16, 29, 50/4 Recovery 15/2
		Refusal at 3.5' gray shale bedrock				crew augered to 4'
		as above, hard, dry	FID 3.99	No Shelby tubes taken into weathered bedrock		Blow counts 25, 36, 50/4 Recovery 1/5
		Refusal at 6.5', wet				50/6 wet at 6.5' attempt to auger down to advance hole to 8'
		Weathered dark gray shale, as above, moist, grading to dry, soft.				22, 50/4 Recovery 1/2

109

HTRW DRILLING LOG

DAZ

HOLE NUMBER 108

PROJECT DAZ PHZ RF Evans

INSPECTOR S. McDonald

SHEET 3 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEO TECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (D)	REMARKS (E)
		OS above, wet at 10.5 ft				50/5 recovery .5 Hole advanced with auger to 12'
	11	Saturated				time 0925 water @ 10.5'
	12					
	13					recovery 0 Auger to advance hole to 14'
	14					0940
	15	Bottom of Hole S. McDonald				No soil spoon sample taken Augered to 15'
	16					
	17					
	18					
	19					
	20					

MONITORING WELL INSTALLATION LOG

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI

DELIVERY ORDER: 0003

MONITORING WELL ID: DAZ MW-108

INSTALLATION START: DATE: 07-16-02 TIME: 1100

INSTALLATION FINISH: DATE: 07-16-02 TIME: 1124

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK TYPE: Global #7 SAND QUANTITY: 3-50lb BAGS

BENTONITE SEAL TYPE: Volclay 3/8" pellets QUANTITY: 1-50lb Tub

GROUT TYPE: CONCRETE/BENTONITE QUANTITY: 49 lbs

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (Inches): .010 SLOT CONFIGURATION: Machine cut

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: SCH 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: GLOBAL #7 SAND

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: SCH 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Threaded

CENTRALIZERS DESIGN AND COMPOSITION: N/A

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
NONE

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES NO

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES NO

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the complete well? YES NO

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: N/A

RECORDED BY: [Signature] 07-16-02
(Signature and Date)

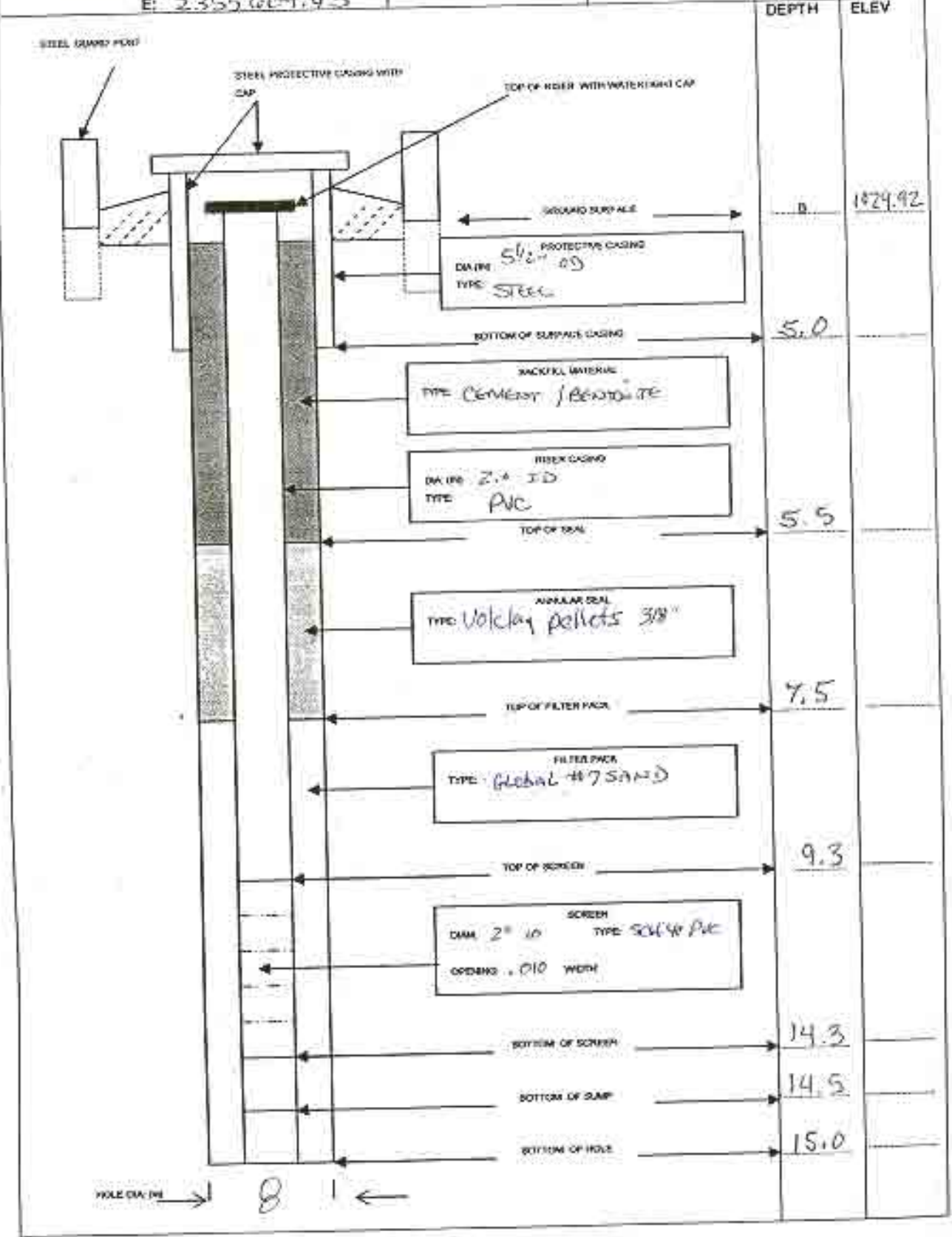
QA CHECK BY: _____
(Signature and Date)

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MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

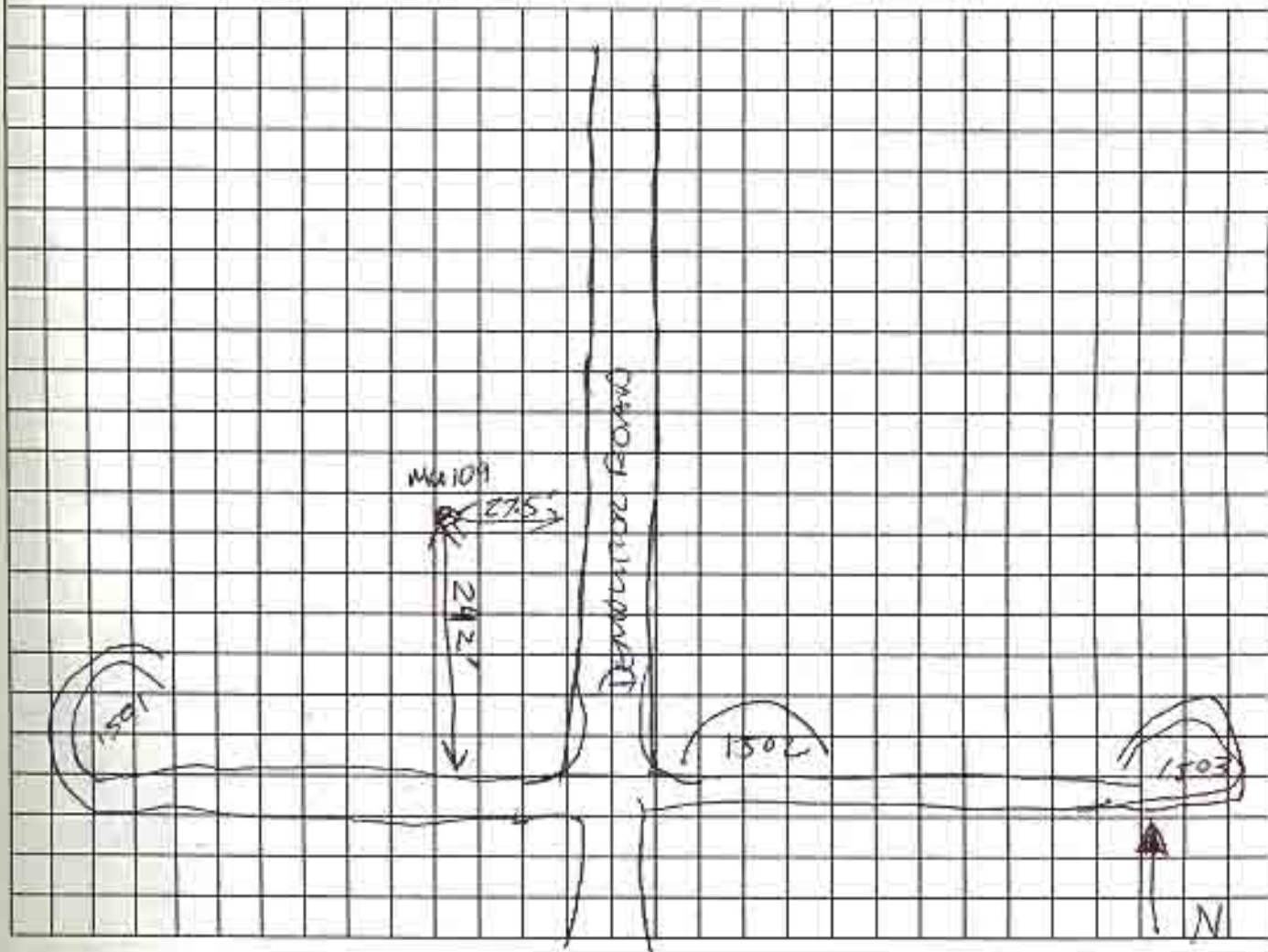
WELL NUMBER: JAZ UW 108 BEGIN: 07-16-02 END: 07-16-02
 COORDINATES: N: S60181.77 REFERENCE POINT: TOC ELEVATION: 1032.36
 E: 2355604.43



HTRW DRILLING LOG		DISTRICT <u>Louisville</u>		HOLE NUMBER <u>MW-109</u>	
1. COMPANY NAME <u>SPEC PRO, INC</u>		2. DRILL SUBCONTRACTOR <u>Toitest, INC.</u>		SHEET <u>1 of 4</u>	
3. PROJECT: <u>DEMO AREA 2 PHASE II RE</u>			4. LOCATION: <u>DEMO AREA 2</u>		
5. NAME OF DRILLER: <u>Toitest Inc Bob Gallina</u>			6. MANUFACTURERS DESIGNATION OF DRILL: <u>CME 75</u>		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION		9. SURFACE ELEVATION	
<u>CME MODEL 75 with 4-1/4" Hollow stem auger</u>		<u>SEE MAP BELOW</u>		<u>1068.66</u>	
<u>2' x 2" 10 Split spoon samplers</u>		10. DATE STARTED: <u>07-22-02</u>		11. DATE COMPLETED: <u>07-22-02</u>	
<u>2' x 3" 10 Shelby tubes</u>		12. OVERBURDEN THICKNESS: <u>24</u>		13. DEPTH GROUNDWATER ENCOUNTERED: <u>11.5'</u>	
13. DEPTH DRILLED INTO ROCK: <u>0'</u>		14. TOTAL DEPTH OF HOLE: <u>24.0'</u>		15. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
16. GEOFTECHNICAL SAMPLES: <u>20-22, 22-24</u>		DISTURBED: <input type="checkbox"/>		UNDISTURBED: <input checked="" type="checkbox"/>	
17. SAMPLES FOR CHEMICAL ANALYSIS: <u>0-2', 2-4'</u>		VOC: <input type="checkbox"/>		METALS: <input checked="" type="checkbox"/>	
18. DISPOSITION OF HOLE: <input type="checkbox"/>		BACKGROUND WELL: <input checked="" type="checkbox"/>		OTHER (SPECIFY): <u>Explosives</u>	
19. TOTAL NUMBER OF CORE BOXES		20. SIGNATURE OF INSPECTOR: <u>[Signature]</u>		21. TOTAL CORE RECOVERY: <u>13 3/6 Ks 24 hours</u>	

LOCATION SKETCH/COMMENTS

SCALE: NOT TO SCALE



HTRW DRILLING LOG

HOLE NUMBER 109

PROJECT: DAZ PH 2 RE EVAMP

INSPECTOR: Ed Kaud

SHEET 2 OF 4

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEDTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0-2'	brown 10 yr 4/3, silty clay with some roots and organics trace of fine gravel. Soft dry. brown to dark yellowish brown 10 yr 4/6 clay trace of silt, fine gravel and gray mottling. Stiff non plastic dry. ML-CL	BZ: .75		0-2' #827 #0757 (Dup)	Blow Count: 4, 5, 8, 9 Recovery: 1.7/2 Time 1001
	2-4'	As above	BZ Sample point .77		2-4' #828 #0860 (Dup)	BC: 8, 20, 15, 18 Recovery: 2/2 Time: 1009
	4-6'	As above.				BC 8, 9, 10, 13 Recovery 1.8/2 Time 1032
	6-8'	Color change to dark grayish brown, 10 yr 4/2, with iron staining, slightly moist ML				BC 11, 15, 18, 25 Recovery 1.3/2 Time 1034
	8-9'	as above to 6.8'				BC 9, 12, 11, 15 Recovery 1.9/2 Time 1054
	9-10'	brown 10 yr 4/3 silty clay, medium stiff, moist, non plastic, trace of fine gravel. CL	Sample point + 2.09			
	10-11'	dark yellowish brown 10 yr 4/4 silt, well sorted, loose, moist to wet ML				
	11-12'	brown oily clay with gravel, some shale fragments stiff moist CL				

HTRW DRILLING LOG

PROJECT: DAZ PH2 RT ROAD

INSPECTOR: M. Cause

HOLE NUMBER 109

SHEET 3 OF 4

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GUTTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		as above to 11.1				BC: 9, 12, 9, 9 Recovery: 2/2
		silty moist, brown clay with gravel silt, wet				
		silty clay, fine gravel, moist, red mineral staining brown 10yr 413, med stiff, slightly plastic				time: 1057 Blow count: 5, 7, 8, 5 Recovery: 1.9/2
		as above				time: 1106 Blow count: 8, 8, 12, 5 Recovery: 1.8/2
		as above to 17.2				time: 1110 Blow count: 9, 11, 11, 13 Recovery: 2/2
		fine to medium grained sand with gravel, poorly sorted, loose, wet 10yr 413 brown, silty clay w/ a trace of fine gravel, moist clay, soft loose				time: 1121 Blow count: 4, 5, 10
		as above to 18.8, wet				Recovery: 1.7/2
		silty clay with fine gravel, trace of coarse gravel, moist to wet, medium stiff, mod plastic to slightly plastic				11:33 time

HTRW DRILLING LOG

HOLE NUMBER *MU109*

PROJECT: *DAZ PAZ RE Pump*

INSPECTOR *McCand*

SHEET *4 of 4*

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEO TECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (D)	REMARKS (E)	
	11		<i>BZ</i>	<i>shelby tube</i>		<i>Element:</i>	
	12		<i>Bz: 3.04</i>			<i>Recovery:</i>	
	22			<i>shelby tube</i>		<i>WET</i>	
	24					<i>time: 1210</i>	
	24	<i>Bottom of the Salt Card</i>				<i>time: 1350</i>	
	25						
	26						
	27						
	28						
	29						
	30						
	31						

MONITORING WELL INSTALLATION LOG

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI

DELIVERY ORDER: 0003

MONITORING WELL ID: DAZ MW-109

INSTALLATION START DATE: 07-22-02 TIME: 1358

INSTALLATION FINISH DATE: 07-22-02 TIME: 1535

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 SAND QUANTITY: 5-50 lb BAGS

BENTONITE SEAL: TYPE: Volclay 3/8" pellets QUANTITY: 1-1/2 50 lb Bucket

GROUT: TYPE: CEMENT / BENTONITE QUANTITY: 49 lb

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Machine Cut

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 SAND

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Threaded

CENTRALIZERS DESIGN AND COMPOSITION: N/A

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

NONE

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES NO

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES NO

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the complete well? YES NO

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: N/A

RECORDED BY: [Signature] 7-22-02
(Signature and Date)

QA CHECK BY: _____
(Signature and Date)

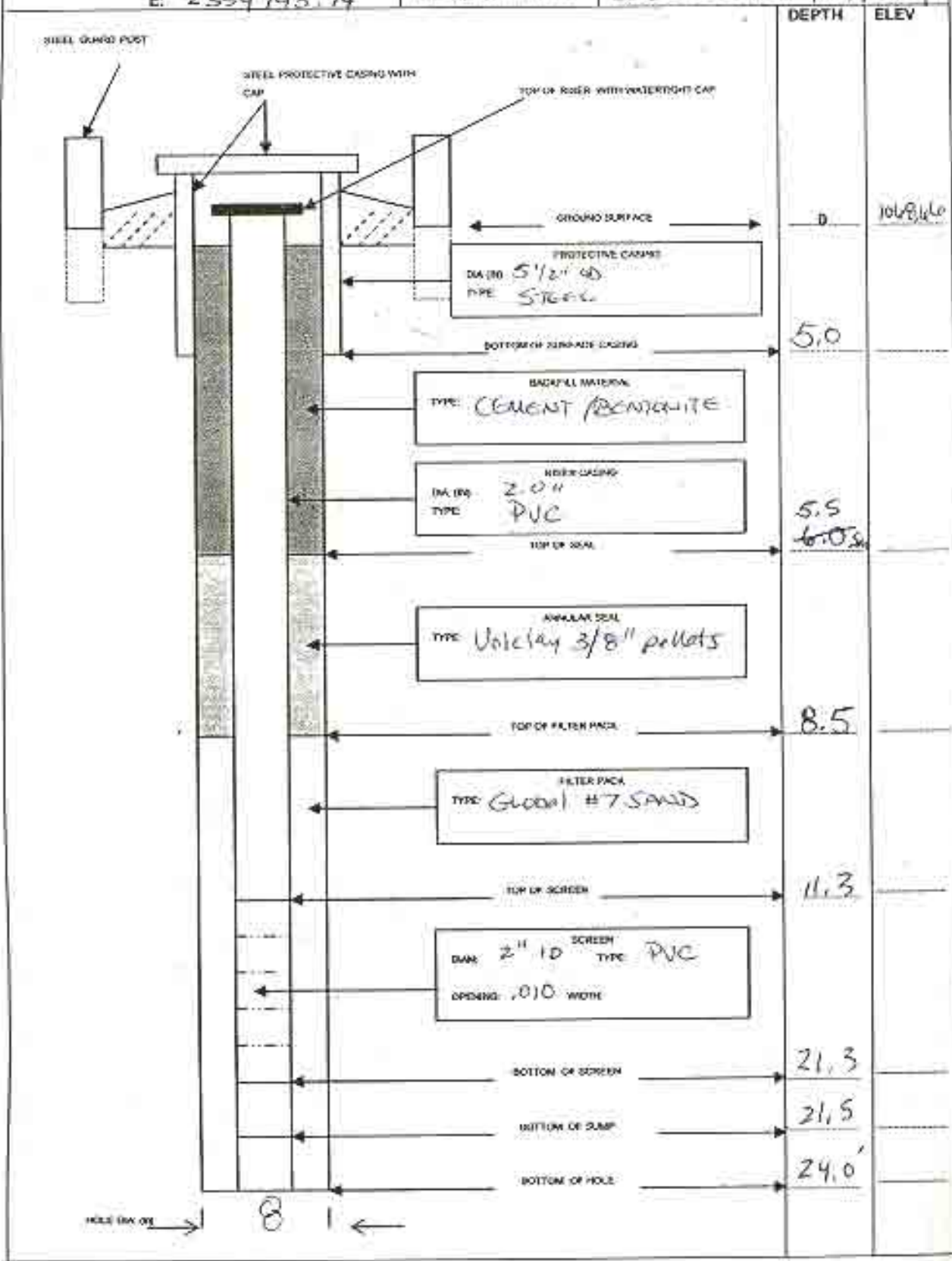
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MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

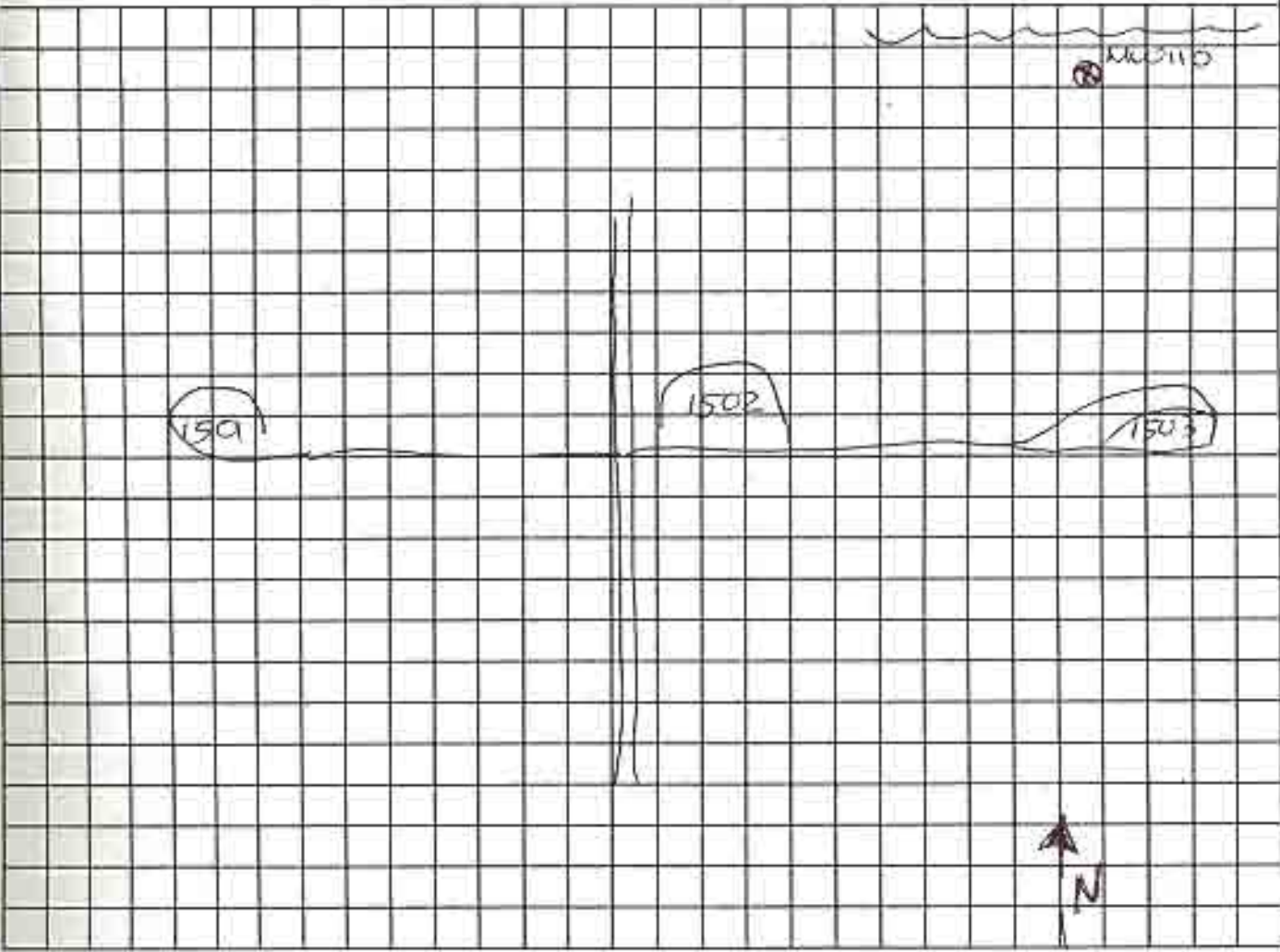
WELL NUMBER: DAZMLW-109 BEGIN: 7-22-02 END: 7-22-02

COORDINATES: N: 551897.89 REFERENCE POINT: TOC ELEVATION: 1071.29
 E: 2354793.14



HTRW DRILLING LOG		DISTRICT: <u>Louisville</u>		HOLE NUMBER <u>MW110</u>	
1. COMPANY NAME <u>Spec Pro, Inc.</u>		2. DRILL SUBCONTRACTOR: <u>ToTest, Inc.</u>		SHEET <u>1</u> of <u>4</u>	
3. PROJECT <u>Demo Area 2 PHASE II RI</u>		4. LOCATION <u>Demo Area 2</u>			
5. NAME OF DRILLER <u>ToTest Inc Bob Golligher</u>		8. MANUFACTURERS DESIGNATION OF DRILL <u>CMG 75</u>			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT <u>ONE MODEL 75 with 4-1/2" hollow stem augers, 2' x 2" ID split spacers, 2' x 3" ID Shelby tubes</u>		8. HOLE LOCATION <u>SEE MAP BELOW</u>			
12. OVERBURDEN THICKNESS <u>20'</u>		9. SURFACE ELEVATION: <u>1061.39</u>			
13. DEPTH DRILLED INTO ROCK <u>N/A</u>		10. DATE STARTED: <u>7-24-02</u>		11. DATE COMPLETED: <u>7-24-02</u>	
14. TOTAL DEPTH OF HOLE <u>20'</u>		15. DEPTH GROUNDWATER ENCOUNTERED: <u>10.3'</u>			
18. GEOTECHNICAL SAMPLES <u>12-14 14-16</u>		DISTURBED		<u>UNDISTURBED</u>	
19. TOTAL NUMBER OF CORE BOXES		20. SAMPLES FOR CHEMICAL ANALYSIS <u>0-2, 2-4</u>		21. TOTAL CORE RECOVERY %	
22. DEPOSITION OF HOLE <u>SAMPLED</u>		23. SIGNATURE OF INSPECTOR <u>[Signature]</u>		24. OTHER (SPECIFY)	
25. OTHER (SPECIFY)		26. OTHER (SPECIFY)		27. OTHER (SPECIFY)	

LOCATION SKETCH/COMMENTS SCALE: NOT TO SCALE



HTRW DRILLING LOG

HOLE NUMBER 110

PROJECT: DAZ PH 2 RT RAPP

INSPECTOR: M. C. Canel

SHEET 2 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEO TECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		yellowish brown 104R silty clay with gray mottling, moist, medium stiff, non-plastic ML	F10 B2 1.69		0-2' 0831	BC: 2,3,5,6 Recovery: 2/2 Time 0830
		as above with less than 5% coarse gravel.			2-4' 0832	BC: 7,8,9,12 Recovery: 1.7/2 Time: 0837
		as above 50% clay, 50% silt with a trace of fine gravel, moist ML CL				3,4,6,6 Recovery: 2/2 time: 0845
		as above, less than 5% coarse gravel.				BC: 6,6,10,12 Recovery: 1.8/2 time: 0855
		as above, with increasing coarse to fine gravel with depth.				BC: 3,3,6,7 Recovery: 1.7/2 time: 0859

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HTRW DRILLING LOG						HOLE NUMBER 110
PROJECT: JAZPHZ RI		INSPECTOR: R. VAPP	INSPECTOR: J. McCune			SHEET 3 OF 4
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		as above to dark yellowish brown silt. with 20% clay less than 5% gravel, wet	FID 1.04			BC: 13, 19, 26, 30 wet at 10.3' Recovery: 2/2
		silty clay 50/50% with a trace of fine gravel, stiff, moist ML-CL				time: 0904
				Shelby tube		Blow count: MA
						Recovery: Full in tube Gray clay - end of hole
						time: 0940
			FID B2 0.57	Shelby tube 10:30		Blow count: MA
						Recovery: Full in tube
						time: 1030
		dark gray 10% R 4/1 silty clay, 20% fine to coarse gravel, moist, medium stiff, slightly plastic CL				BC: 5, 7, 8, 9
						Recovery: 17/2
						time: 1040
		Same as above, with a trace of weathered shale fragments	Barcode 2.51 FID			BC: 4, 5, 5, 5
						Recovery: 4/2
						time: 1045
		Bottom of hole 20				

HTRW DRILLING LOG

HOLE NUMBER 110

PROJECT: DAZ PA2 RI RWAP

INSPECTOR: *J.M. Cause*

SHEET 4 OF 4

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLING (F)	REMARKS (G)
	20					bc: N/A Recovery: Time:
	22					
	24					
	26					
	28					
	30					
	32					
	34					
	36					
	38					
	40					
	42					
	44					
	46					
	48					
	50					
	52					
	54					
	56					
	58					
	60					
	62					
	64					
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	72					
	74					
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	80					
	82					
	84					
	86					
	88					
	90					
	92					
	94					
	96					
	98					
	100					

J.M. Cause

MONITORING WELL INSTALLATION LOG

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI

DELIVERY ORDER: 0003

MONITORING WELL ID: DAZMW-110

INSTALLATION START: DATE: 07-24-02 TIME: 1055

INSTALLATION FINISH: DATE: 07-24-02 TIME: 1150

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: GLOBAL #7 SAND QUANTITY: 2-50lb BAGS

BENTONITE SEAL: TYPE: Volclay 3/8" pellets QUANTITY: 1-50lb Bucket

GROUT: TYPE: Cement/Bentonite QUANTITY: 49 lbs dry w/ 4 GAL WATER
45 lb / 4 lb

DESCRIPTION OF WELL SCREEN

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Machine Cut

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 SAND

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Threaded

CENTRALIZERS DESIGN AND COMPOSITION: N/A

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

Rods come apart in hole; drillers reconnect +
remove.

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES [] NO []

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [] NO []

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the complete well? YES [] NO []

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: NONE

RECORDED BY: [Signature] 7-24-02 QA CHECK BY: _____
(Signature and Date) (Signature and Date)

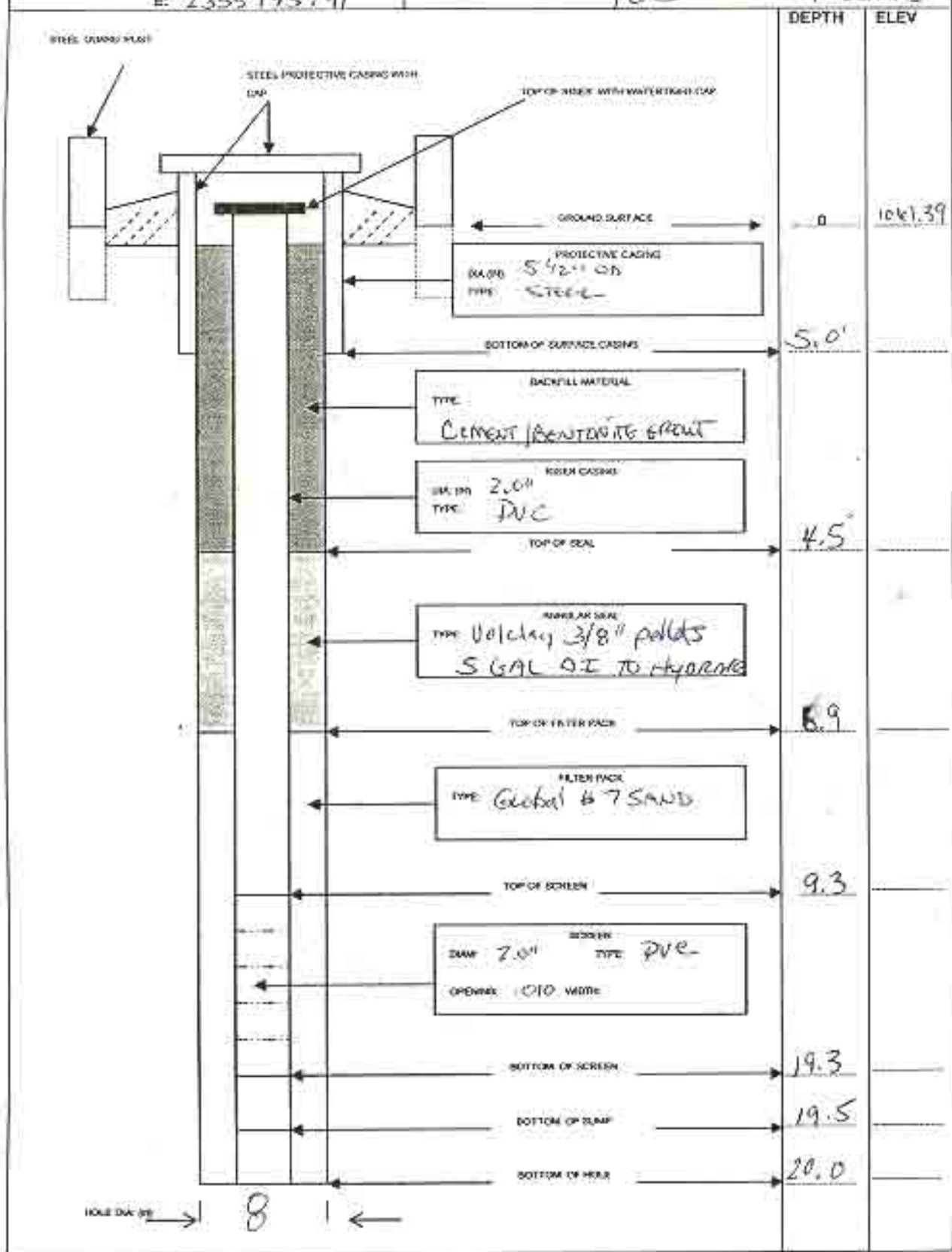
159

MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

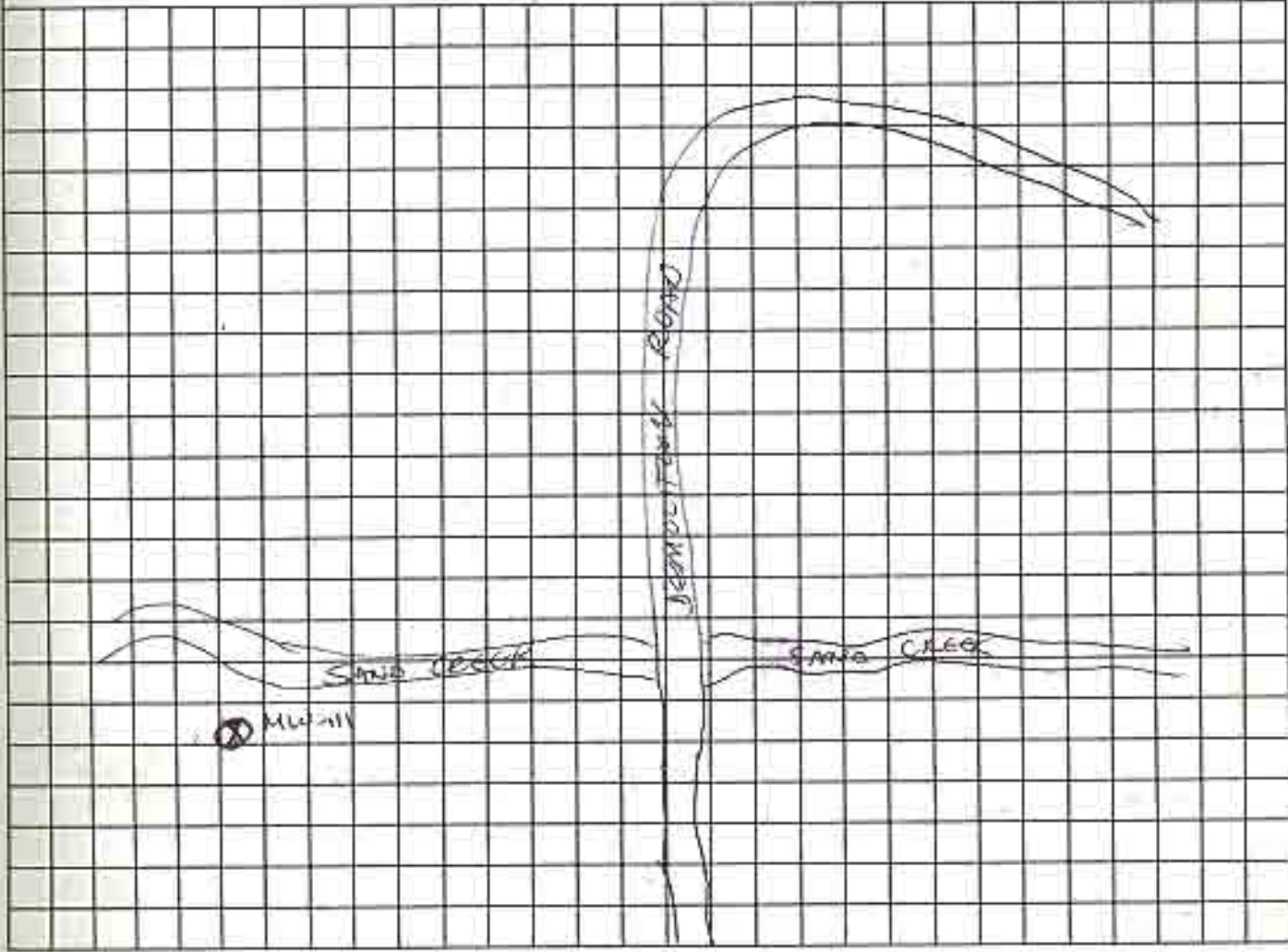
WELL NUMBER: DAZ MW 110 BEGIN: 7-24-02 END: 7-24-02

COORDINATES: N: 559427.02 REFERENCE POINT: TOC ELEVATION: 1063.75
 E: 2355195.91



HTRW DRILLING LOG		DISTRICT: <u>Louisville</u>		HOLE NUMBER: <u>MU7-111</u>	
1. COMPANY NAME: <u>Spec PRO, Inc</u>		2. DRILL SUBCONTRACTOR: <u>TOULTEST, INC.</u>		SHEET <u>1 of 3</u>	
3. PROJECT: <u>DEMO AREA 2 PHASE II RI</u>			4. LOCATION: <u>DEMO AREA 2</u>		
5. NAME OF DRILLER: <u>Bob Gollinue</u>			6. MANUFACTURERS DESIGNATION OF DRILL: <u>CME 75</u>		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: <u>2" x 2" split spoons</u> <u>3" x 2" Shelby Tubes</u>		8. HOLE LOCATION: <u>SEE MAP BELOW</u>		9. SURFACE ELEVATION: <u>1039.63</u>	
10. OVERBURDEN THICKNESS: <u>8.0'</u>		11. DATE STARTED: <u>07-18-02</u>		11. DATE COMPLETED: <u>07-19-02</u>	
13. DEPTH DRILLED INTO ROCK: <u>collected split spoons and</u> <u>Entered in weathered shale to 16'</u>		15. DEPTH GROUNDWATER ENCOUNTERED: <u>5.0'</u>		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: <u>5.0' 24 hours 865</u>	
14. TOTAL DEPTH OF HOLE: <u>16'</u>		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):			
18. GEOTECHNICAL SAMPLES: <u>6-8'</u>		DISTURBED: <input type="checkbox"/>		INDISTURBED: <input checked="" type="checkbox"/>	
19. TOTAL NUMBER OF CORE BOXES:		20. SAMPLES FOR CHEMICAL ANALYSIS: <u>02' 2-4'</u>		21. TOTAL CORE RECOVERY: <u>5</u>	
22. DISPOSITION OF HOLE: <input checked="" type="checkbox"/> BACKFILLED <input checked="" type="checkbox"/> MONITORING WELL		OTHER (SPECIFY): <u>explosives</u>		23. SIGNATURE OF INSPECTOR: <u>[Signature]</u>	

LOCATION SKETCH/COMMENTS SCALE: NOT TO SCALE



HTRW DRILLING LOG				HOLE NUMBER 111		
PROJECT DAZ PH2 RI RUMAR		INSPECTOR Sullivan		SHEET 2 OF 3		
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	IRITECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Dr brown 10yr 3/3 clay with organics, soft	BZ FID 3.58		0-2' 0835	B.C. 2,2,3 Recovery 1.7/2
		Brown 10yr 3/3 silty clay, soft, moist, non plastic				1350
		Brown 10yr 4/3 med grained sand w/ 5% fine gravel, moist to wet	sw			
		Brown 10yr 4/3 silty clay with fine gravel, moist				
		As above, weathered shale fragments at 3' to end of interval	FID 3.81		2-4' 0836	B.C. 3, 3, 3 Recovery 1.4/2
						1355
		As above with gray mottling	CL			
		Dark gray 10yr 4/1 clay with fine gravel and weathered shale fragments, moist to soft	wet,			BC 2, 2, 2, 2 Recovery 1.4/2 water in hole up to 2'
						Time 1402
				Shelby Tube		
						Time 1420
		DK gray 10yr 4/1 weathered shale, moist, firm, finely laminated				B.C. 8, 8, 16, 19 Recovery 1.9/2
						time 1434

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HTRW DRILLING LOG						HOLE NUMBER 111
PROJECT: DAZ PAZ RT. RUMPA INSPECTOR: S. M. O'Connell						SHEET 3 OF 3
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (E)	REMARKS (F)
	11	AS ABOVE weathered shale, dark gray, finely laminated, stiff, moist	F10 BZ 3.38			BC 8, 12, 13, 15 Recovery 1.5/2
	12	AS ABOVE				time 1440
	13					BC 10, 8, 15, 30 Recovery 1.6/2
	14	AS ABOVE				1445 time
	15		F10 BZ 1.42			BC 18, 30, 40, 46 Recovery
	16	Bottom of Hole	F10 BORG HOLE .29			time 1449
	17			Sealed		
	18					
	19					
	20					

MONITORING WELL INSTALLATION LOG

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI

DELIVERY ORDER: 0003

MONITORING WELL ID: DAZ MW-111

INSTALLATION START: DATE: 07-19-02 TIME: 0940

INSTALLATION FINISH: DATE: 07-19-02 TIME: 1010

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE Global #7 SAND QUANTITY: 4-50lb bags
 BENTONITE SEAL: TYPE Volclay 3/8" pellets QUANTITY: 1-50lb Bucket
 GROUT: TYPE CEMENT/BENTONITE QUANTITY: 49 lbs

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Machine cut
 OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"
 SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC
 MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 SAND

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"
 SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC
 MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Threaded PVC

CENTRALIZERS DESIGN AND COMPOSITION: NONE USED

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

NONE

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES NO

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES NO

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the complete well? YES NO

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: N/A

RECORDED BY: [Signature] 7/19/02 QA CHECK BY: _____
 (Signature and Date) (Signature and Date)

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MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

WELL NUMBER: DAZ MW 111

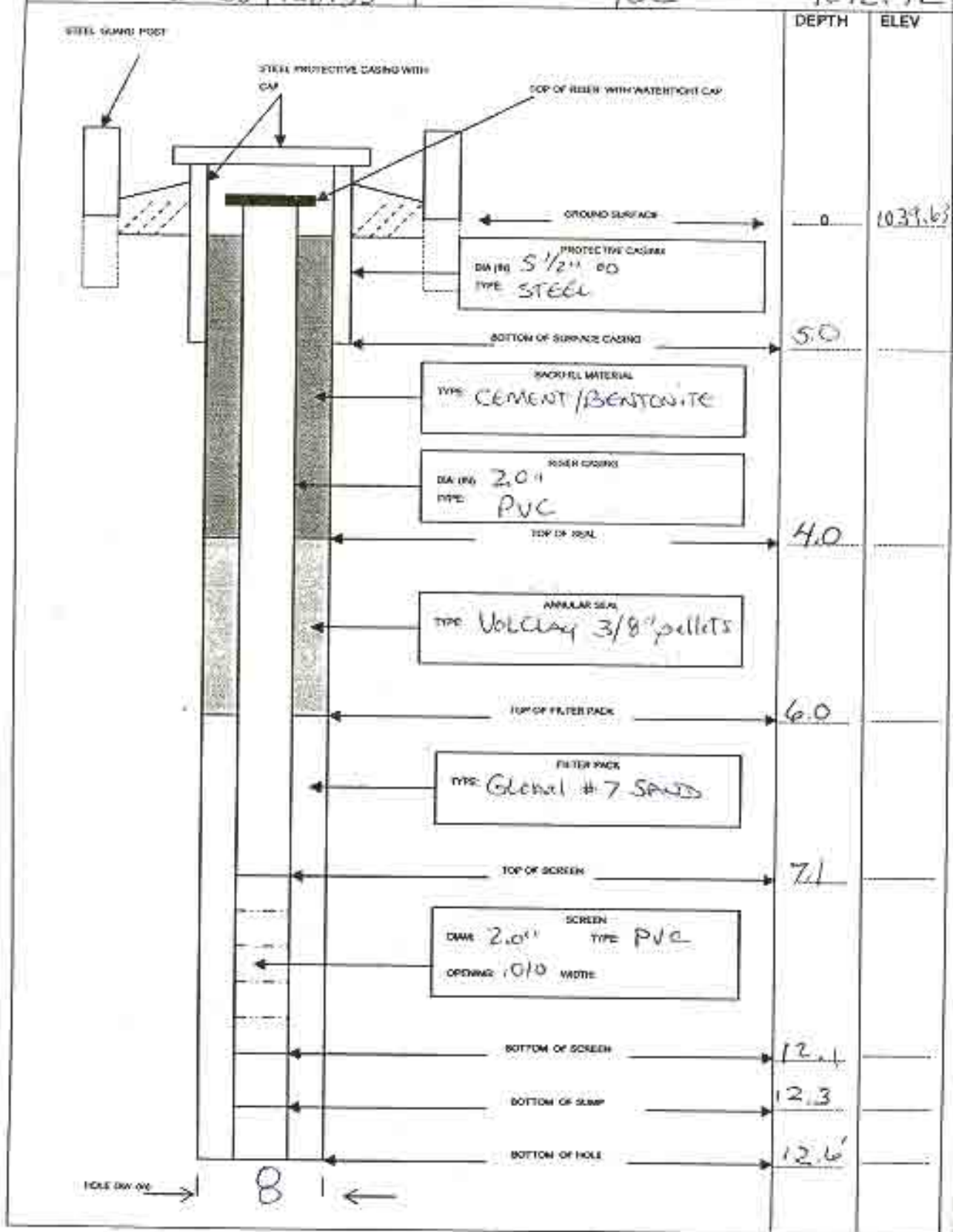
BEGIN: 7-19-02

END: 7-19-02

COORDINATES: N: 660222.94
E: 2354728.33

REFERENCE POINT: TOC

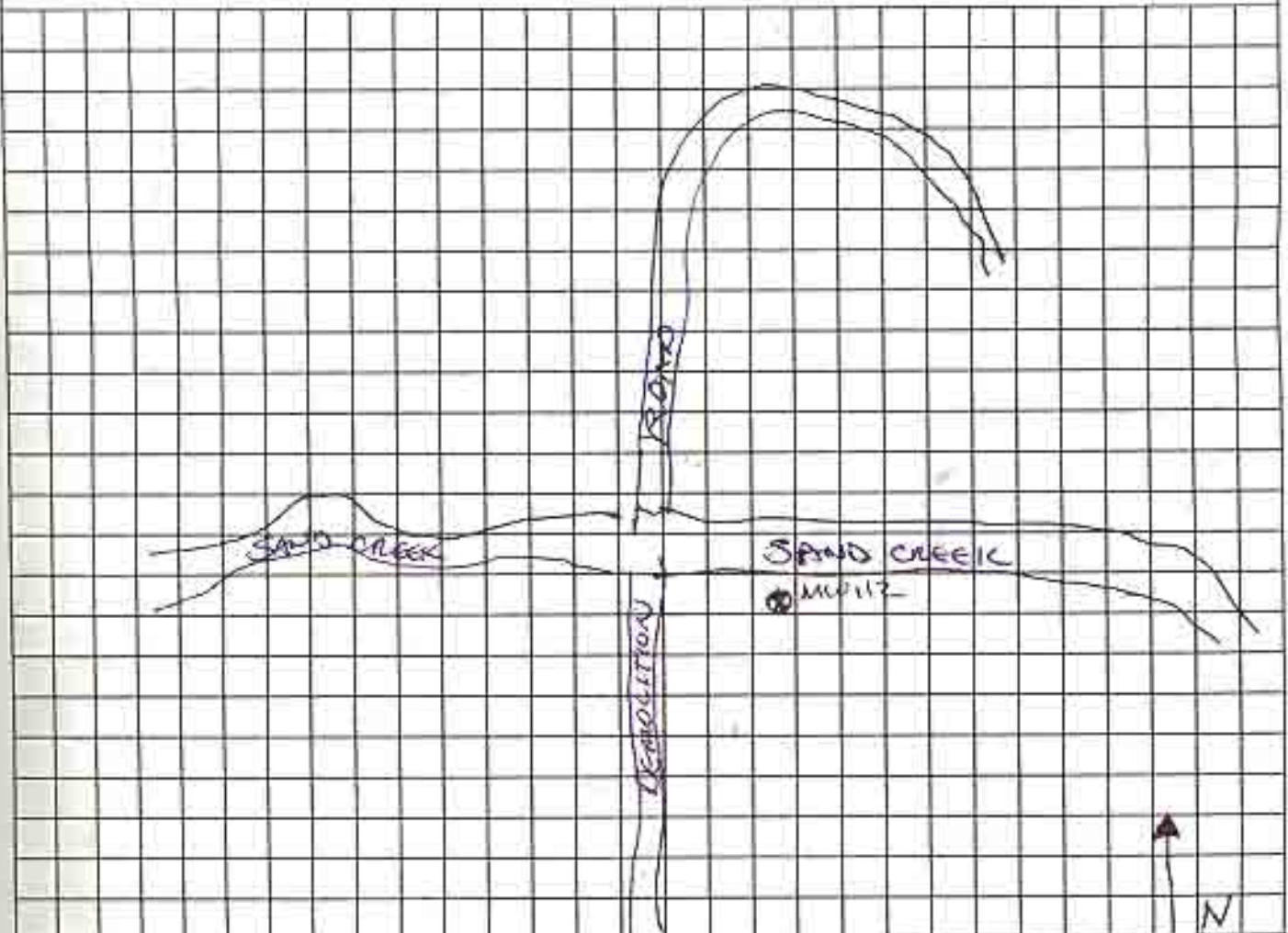
ELEVATION: 1042.12



HTRW DRILLING LOG		DISTRICT <u>Louisville</u>		HOLE NUMBER <u>MW112</u>			
1 COMPANY NAME <u>SPEC PRO, INC.</u>		2 DRILL SUBCONTRACTOR <u>TOLTEST, INC.</u>		SHEET <u>1</u> OF <u>3</u>			
3 PROJECT <u>DEMO AREA 2 PHASE II RT.</u>			4 LOCATION <u>DEMO AREA 2</u>				
5 NAME OF DRILLER <u>Robert Linn Toltest Inc</u>			6 MANUFACTURERS DESIGNATION OF DRILL <u>CME 75</u>				
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT <u>2' x 2" Split Spoons</u>		CME MODEL 75 with <u>4-1/4" hollow stem augers</u>		8 HOLE LOCATION <u>SEE MAP BELOW</u>			
12 OVERBURDEN THICKNESS <u>15'</u>			9 SURFACE ELEVATION <u>1034.87</u>				
13 DEPTH DRILLED INTO ROCK <u>N/A</u>			10. DATE STARTED <u>07-23-02</u>		11. DATE COMPLETED <u>07-23-02</u>		
14 TOTAL DEPTH OF HOLE <u>15'</u>			15. DEPTH (GROUND) WATER ENCOUNTERED: <u>6'</u>				
			16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED <u>3.78 48 hours</u>				
			17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY):				
18 GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF DOPE BOXES	
20 SAMPLES FOR CHEMICAL ANALYSIS <u>0-2', 2-4'</u>		KIC		METALS		OTHER (SPECIFY)	
				<input checked="" type="checkbox"/>		<u>Enclaves</u>	
22. DISPOSITION OF HOLE		BACKFILL		MONITORING WELL		OTHER (SPECIFY)	
		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		23. SIGNATURE OF INSPECTOR <u>Shelton</u>	

LOCATION SKETCH/COMMENTS

SCALE: NOT TO SCALE



HTRW DRILLING LOG

PROJECT: DAZ PHZ RI RAMP

INSPECTOR: S. McCaul

HOLE NUMBER 112

SHEET 2 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOCHEM SAMPLE OR CORRECTION	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		dark brown 104r. 3/3 Clay silt. 15% fine gravel, with a trace of roots. ML grades into a dark brown silty clay, moist, soft, non plastic, increasing coarse gravel with depth, mineral staining. CL			0-2' #839	BC 4, 3, 4, 3 Recovery 1.3/2 Time: 1345
					2-4' #838	BC 4, 3, 3, 3 Recovery - NONE Large cobble in hole. Accerted to 4ft. No sample Time: 1350
		dark grayish brown 104r 4/1, poorly sorted sand with 20% gravel fine to coarse. Trace of clay, wet, loose SP			4-6' #840	BC: 3, 3, 6, 7 Recovery: .7/2 Time: 1400
		as above, saturated, with increasing gravel to 50% GC				BC: 6, 7, 8, 9 Recovery: .5/2 time: -1405
		as above, saturated GC				BC 3, 5, 6, 8 Recovery 1/2 Time 1410

HTRW DRILLING LOG						HOLE NUMBER 112
PROJECT: DAZ OH2 R5 RWAIP			INSPECTOR S. McNeal			SHEET 2 OF 3
ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		As above to 11' SP GC				BC 3, 5, 8, 10 Recovery 1.2/2
	11'	Very dark gray 104R31 weathered shale moist, fine med. stiff, finely laminated				time 1416
	12'	As above to 14'				BC 3, 5, 8, 9 Recovery 1.2/2 time 1423
	15'	Bottom of Hole 150' S. McNeal				
	16'					
	17'					
	18'					
	19'					

MONITORING WELL INSTALLATION LOG

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER: 0003

MONITORING WELL ID: DAZ Mw 112
INSTALLATION START: DATE: 07-23-02 TIME: 1513
INSTALLATION FINISH: DATE: 07-23-02 TIME: 1610

ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: Global #7 Sand QUANTITY: 3.5 - 50 lb Bags
BENTONITE SEAL: TYPE: Volclay 3/8" pellets QUANTITY: 1 - 50 lb Bucket
GROUT: TYPE: Cement/Bentonite QUANTITY: 49 lbs

DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 010 SLOT CONFIGURATION: Machine Cut
OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"
SCHEDULE/THICKNESS: SEA 40 COMPOSITION: PVC
MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: _____

DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"
SCHEDULE/THICKNESS: SEA 40 COMPOSITION: PVC
MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Threaded

CENTRALIZERS DESIGN AND COMPOSITION: N/A

DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
None

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES [] NO []
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [] NO []
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the complete well? YES [] NO []

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: _____

RECORDED BY: SMC [Signature] 7-23-02 QA CHECK BY: _____
(Signature and Date) (Signature and Date)

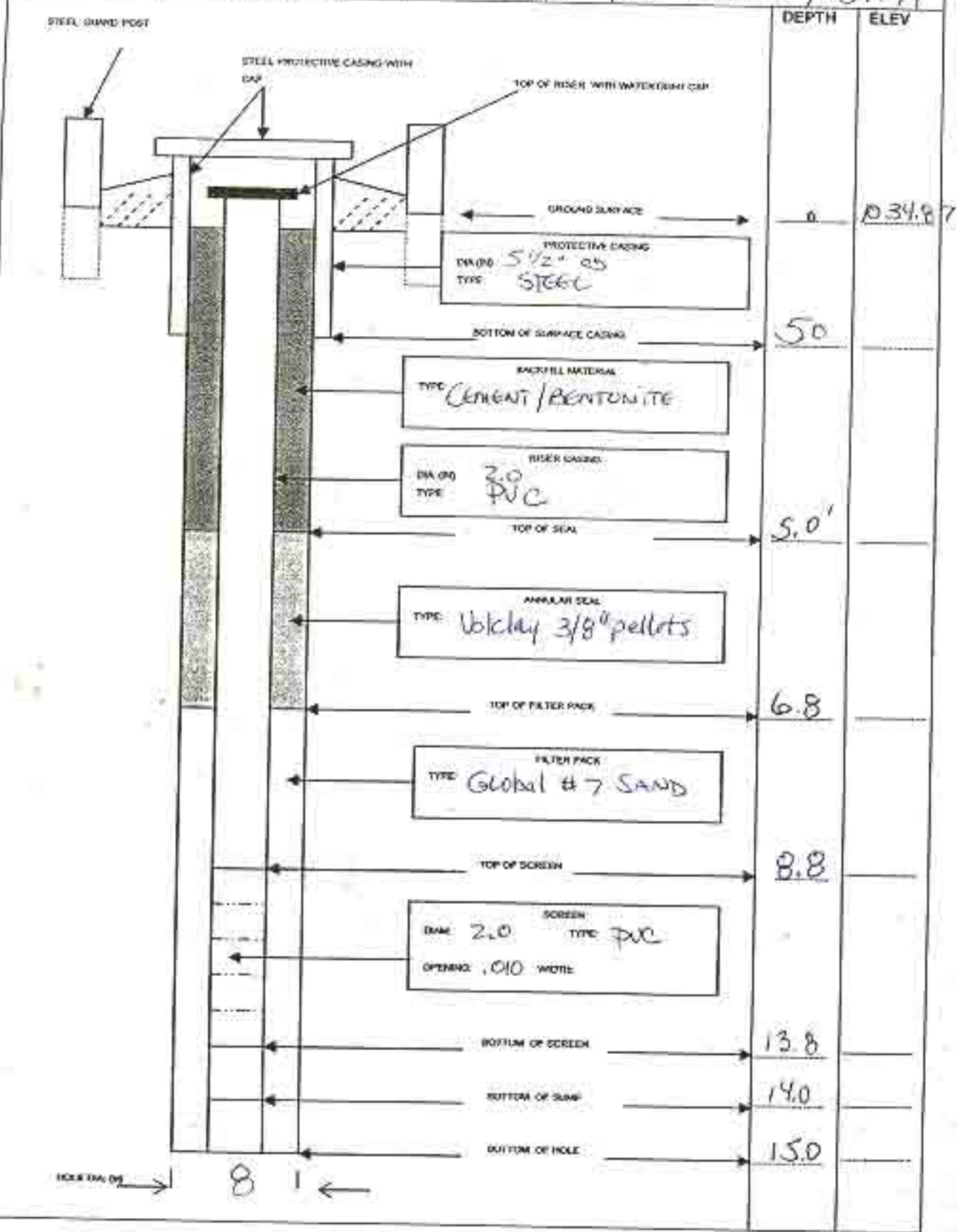
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MONITORING WELL CONSTRUCTION DIAGRAM

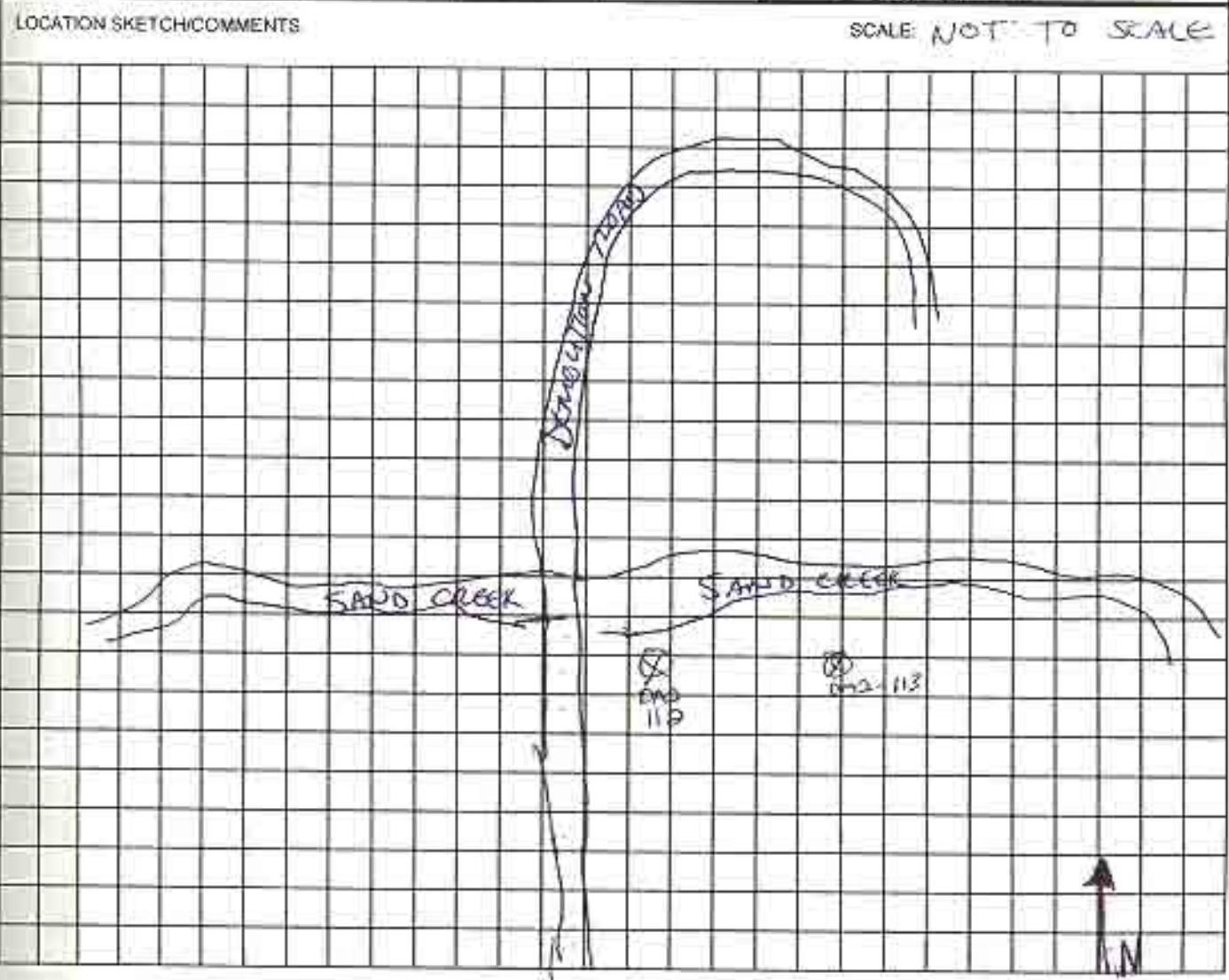
PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

WELL NUMBER: DA2.MC0112 BEGIN: 07-23-02 END: 07-23-02

COORDINATES: N: 540378.35 REFERENCE POINT: TOC ELEVATION: 1037.44
 E: 2355018.78



HTRW DRILLING LOG		DISTRICT: <u>Louisville</u>		HOLE NUMBER <u>113</u>	
1. COMPANY NAME <u>SPEC PRO, I, NC</u>		2. DRILL SUBCONTRACTOR <u>Toitest, INC</u>		SHEET <u>Lo 3</u>	
3. PROJECT <u>DEMO AREA 2 PHASE II RI</u>			4. LOCATION <u>DEMO AREA 2</u>		
5. NAME OF DRILLER <u>Bob Gollinui Toitest</u>			6. MANUFACTURERS DESIGNATION OF DRILL <u>CME 75</u>		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT <u>2' x 2" Split spools</u>		8. HOLE LOCATION <u>SEE MAP BELOW</u>		9. SURFACE ELEVATION <u>1034.51</u>	
		10. DATE STARTED <u>07-23-02</u>		11. DATE COMPLETED <u>07-23-02</u>	
12. OVERBURDEN THICKNESS <u>14.0'</u>		15. DEPTH GROUNDWATER ENCOUNTERED <u>6.9'</u>			
13. DEPTH DRILLED INTO ROCK <u>N/A</u>		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED <u>4.83 48 hours</u>			
14. TOTAL DEPTH OF HOLE <u>14.0'</u>		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES		20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
				23. SIGNATURE OF INSPECTOR <u>[Signature]</u>	



HTRW DRILLING LOG

HOLE NUMBER 113

PROJECT: DAR PAL RI RUMAP

INSPECTOR: [Signature]

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEO TECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		DK yellowish brown 10YR 4/4 silty clay w trace fine gravel, roots, dry, soft CL			0-2' 0843	Blow count: 2, 1, 1, 3 Recovery: 1.5/2
		Dark Brown 10YR 2 3/3 silt, well sorted, with a trace of organics, grading to a dark yellowish brown 10YR 4/5 ML				time: 0834
		yellowish brown 10YR off clay silt, moist, trace of gray mottling, soft, ML			2-4' 0844	BC 3,3,5,5, Recovery 1.9/2
		yellowish 10YR silty brown sand, trace of fine gravel, coarse to increasing gravel w/ depth, loose, wet SP				time 0837
		silty clay with coarse gravel dark yellowish brown 10YR 5/8 moist, plastic CL				BC: 5, 6, 8, 10 Recovery: 1.9/2
		dark yellowish brown 10YR 4/6 fine sand with gravel, trace of clay poorly sorted 30% gravel, moist. SP				time: 0846
		as above to 6.8, wet SP				BC: 11, 18, 14, 19
		gray 10YR 5/1, sand: gravel, wet SP				Recovery: 1.8/2
		dark yellowish brown 10YR 4/6 50% gravel, wet SP				time: 0855
		dark gray 10YR 6/1, 10% coarse gravel, loose, wet GC				BC: 7, 8, 10, 11
		Dark gray 10YR 4/1, sand and gravel poorly sorted, wet, loose, GC				Recovery: 1.7/2
						time: 0903

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HTRW DRILLING LOG

HOLE NUMBER 113

PROJECT: JAZ A12 RI RUMAP

INSPECTOR: *McCauley*

SHEET 3 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (E)	REMARKS (D)
		as above to 11.5 ft. SC				BC: 9, 11, 9, 9 Recovery: 2/2
	11	Very dark gray clay 3/1 Clay, moist, medium stiff, Slightly plastic				time: 0906
	12	as above to 12.6 ft. SC				BC: 5, 7, 12, 14
	13	Very dark gray clay 3/1 weathered shale, moist, stiff				Recovery: 1.5/2
	14	Bottom of Hole @ 14.0'		<i>McCauley</i>		time: 0910
	15					
	16					
	17					
	18					
	19					
	20					

MONITORING WELL INSTALLATION LOG

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI

DELIVERY ORDER: 0003

MONITORING WELL ID: DAZM(W)-113

INSTALLATION START: DATE: 07-23-02 TIME: 1122

INSTALLATION FINISH: DATE: 07-23-02 TIME: 1148

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 SAND QUANTITY: 3-50 Lb Bags

BENTONITE SEAL: TYPE: Uoblay 3/8" pellets QUANTITY: 1-50 Lb Bucket

GROUT: TYPE: CEMENT/BENTONITE QUANTITY: 49 Lbs

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Machine Cut

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 SAND

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.375" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Threaded PVC

CENTRALIZER'S DESIGN AND COMPOSITION: NONE USED

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 5.0" COMPOSITION: STEEL

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

Heaving sand at 6.5'. Pellets on top, from 6.5' to 3 feet bgs.

Was all well screen and casing material used for construction free of foreign matter (e.g. adhesive tape, labels, soil, grease, etc.)? YES [] NO []

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [] NO []

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch baller throughout the entire length of the complete well? YES [] NO []

QUANTITY OF APPROVED WATER USED FOR FILTER PACK EMPLACEMENT: _____

RECORDED BY: S. McNeal 7-23-02 QA CHECK BY: _____
(Signature and Date) (Signature and Date)

MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

WELL NUMBER: DAZ MW 113 BEGIN: 07-23-02 END: 07-23-02

COORDINATES: N: 560394.01 E: 2355153.13 REFERENCE POINT: TOC ELEVATION: 1037.11

