Appendix H

References

References

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Appendix I

Barr Field Audit Program – Field Audit Checklist

BARR ENGINEERING COMPANY FIELD AUDIT PROGRAM

FIELD AUDIT CHECKLIST

Site/Project Number:			
Date of Audit:			
Field Personnel			
Name		Title	
	-		
	_		
Auditing Personnel			
Name		Title	
	-		

1.0 **Advance Preparation for Sampling**

Α.	Coordination	
1.	Does MPCA or client need notification of sampling at this site Was that completed?	
2.	Were appropriate sample containers obtained from the laboratory? _	
3.	Were sample containers received in good condition?	
В.	Purging and Samping Equipment	
	The Barr Engineering Company Field Work Check Lists provides a comprehensive overview of the items necessary for successful field event. Sections include: project reference material, miscellaneous tools and supplies, transportation, pumps, bailers, power supplies, documentation and labeling, decontamination, health and safety, other personal gear.	
	Has a Field Work Check List been completed for the event?	
	If no field work check list was completed, does the field technician have all the proper equipment to perform proper groundwater sampling operations based on the project specific requirements?	
Preliminary Field Work		
A.	Water Level Measurements	

1.	Was the water level read to the nearest 0.01 foot?	
2.	Was a product interface probe necessary to measure LNAPL or DNAPL?	
3.	Was the water level recorded on the Field Log Data Sheet?	
4	Was the water level verified with a second reading?	

Was the water level marker decontaminated appropriately?

5.

2.0

2.0 Sampling of Monitoring Wells

A. Well Purging/Stabilization

1.	Verify the correct order of purging/sampling is being followed?
2.	Field stablization parameters should be measured after several existing well volumes have been removed. Typically, between 3 and 5 well volumes are removed with stablization readings obtained after the third, fourth and fifth column volumes. Was this or equivalent completed?
3.	Target stablization criteria is given below: Temperature +/- 0.1oC Specific Conductance (temperature corrected EC) +/-5% Dissolved Oxygen +/- 0.5 mg/L Redox Potential (-50 to +50) +/-20 mV (-100 to +100) +/- 40 mV (-200 to +200) +/- 60 mV Turbidity: < or = to 10 NTU or +/- 5% if > 10 NTU
	Was the target stabilization criteria met prior to sampling?
4.	Was calibration of all field instrument completed and documented prior to sampling?
5.	Was documentation completed as purging activities progressed?
6.	For low-yielding wells, were they purged dry and allowed to recharge?
7.	Were a minimum of 3 to 5 well volumes of removed?
8.	If containerization of purge water is required was it performed?
9.	Was care given to avoid placing clean sampling equipment (hoses, lines, etc.) on the ground or other potentially contaminated areas prior to use at the well?
10.	Was appropriate or required purging equipment employed? (i.e., bladder, peristaltic, submerible pumps, clean disposable tubing, etc.)

11.	Were decontamination procedures for non-dedicated equipment employed?
В.	Sample Collection
1.	Was a clean bailer and line used for sample collection?
2.	Was the bailer slowly lowered into the well (minimizing aeration)?
3.	Was the sampling completed "in-line" using dedicated equipment?
4.	Were vehicles or generator running during sample collection?
5.	Were the vehicles or generators downwind from the monitoring point?
5.	Were new sampling gloves worn at the time of collection?
6.	Were dirty gloves replaced as necessary?
7.	Were containers filled in the correct order? (i.e., volatiles, semivolatiles, metals, general chemical)
8.	Were samples filtered as necessary (0.45 micron)?
9.	Were in-line filtered employed for dedicated wells?
10.	Was a chain-of-custody completed at the monitoring point?
11.	Were field QA/QC samples collected as required?
12.	Were samples placed for "storage" within an acceptable time-frame and on ice (@4oC)?
13.	Was all non-dedicated or disposable sampling equipment decontaminated as required?

Comments:				