

May 2015

QC Checklists

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: ~~S-5~~ S-5

Boring/Monitoring Well Number: MW-025

Starting Date: 5-19-15

Date: 5-27-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S - 5

Boring/Monitoring Well Number: MW-025

Starting Date: 5-19-15

Date: 5-27-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.


	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-27-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S - 5

Monitoring Well Number: MW-025

Starting Date: 5-19-15

Completion Date: 5-27-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-025

Starting Date: 5-17-15

Completion Date: 5-27-15


Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-27-15

WELL ABANDONMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-502

Starting Date: 5-27-15


Completion Date: 5-27-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Monitoring Well Abandonment:**

1. Was a geologist or geotechnical engineer present during the monitoring well abandonment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths measured prior to monitoring well abandonment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Has all equipment been decontaminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were all meters on site (PID and CGI), calibrated prior to start, and calibration checked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was monitoring well abandoned per the SOP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. If a pump was present, was it removed and decontaminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the site restored to original condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was the abandonment information recorded in the field logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were any special conditions encountered and the resulting actions noted in the field logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were all materials removed and disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the Kansas State WWC-5 Form completed and submitted to KDHE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-27-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

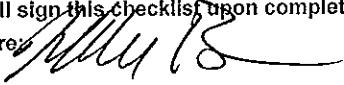
Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-26-15

SAFETY AND HEALTH CHECKLIST

Date: 5-26-15

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Personnel Observed and Locations: site wide, BMID, Avatar, & Traut

Complete weekly for each site. Answer each question by checking the appropriate column (yes, no, or N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Documentation

1. Is the Site Health and Safety Plan (SSHP) on the Site?	✓				
2. Has the SSHP been reviewed, dated, and signed within the last year?	✓				
3. Are the tasks being completed reflected in the hazard task analysis?	✓				
4. Is there a written acknowledgement that all employees, including subcontractors have been briefed and read the SSHP?	✓				
5. Are the following training records current and available:					
* 40-Hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	✓				
* 24 Hours Supervised Field Experience?	✓				
* 8-Hour HAZWOPER Annual Refresher?	✓				
* CPR/First Aid?	✓				
* 8-Hour Hazardous Waste Site Supervisor, and refresher?	✓				
* Initial Site Health and Safety Briefing?	✓				
* Site Health and Safety Briefing for each location or site?	✓				
6. Are emergency maps posted at the site and maintained in vehicles?					✓
7. Were daily safety checklists completed and fire extinguishers checked?	✓				
8. Were applicable Material Safety Data Sheets at the Site?	✓				
9. Are documents current and available that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment?	✓				
10. Were daily air monitoring equipment calibrations recorded?	✓				
11. Are respirator fit test records available and current?	✓				

Observations

12. Are exclusion zones and contaminant reduction zone adequately marked?					✓
13. Is required personal protective equipment available and correctly used, maintained, and stored?	✓				

SAFETY AND HEALTH CHECKLIST

Date: 5-26-15

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Personnel Observed and Locations: BMCD, Avatar, Trout, site wide

Complete weekly for each site. Answer each question by checking the appropriate column (yes, no, or N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

14. Is the following emergency equipment located at each site:					
* Fire extinguisher?	/				
* Eyewash (15 minutes fresh water)?	/				
* Communications (walkie-talkie or phone)?	/				
* First aid kit?	/				
15. Is the buddy system in use?	/				
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	/				
17. Is air monitoring equipment being used appropriately?	/				
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	/				
19. Was a random employee asked if he/she know site hazard and emergency procedures?	/				
20. Is the drill rig kill switch clearly marked and easily accessible?	/				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-26-15

IDW MANAGEMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-010, MW-020, MW-025, MW-060, SB-02, SB-03, SB-05(R), SB-06,

Date: 5-27-15 SB-07


Complete weekly. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Investigation-Derived Waste Management

1. Was all IDW managed according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were soil cuttings, drilling fluids, decon water, development water, and PPE containerized in 55-gallon drums?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all containers properly labeled and placed on pallets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the Drum Inventory Worksheet completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were all containers in satisfactory condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-27-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A


Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR & COC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-20-15

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): N/A

Surface Soil/Sediment/Surface Water Sample Number(s): SW-06, SW-07, SW-05, SW-04, SD-06, SD-07, SD-04.

Sampling Date: 5-20-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).


If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Packing, Storing, and Shipment of Samples

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-20-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): N/A

Date: 5-20-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.


Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-20-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-19-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-19-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: **S-5**

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

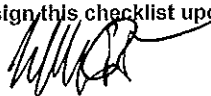
Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DRCR & COL)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-19-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: **S-5**Boring/Monitoring Well Number(s): **SB-01 / MW-025**Sampling Date: **5-19-15**

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Boring/Monitoring Well Number(s): SB-01 / MW-025Sampling Date: 5-19-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

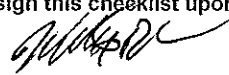
Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: Date: 5-19-15

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-01 / MW-025

Surface Soil/Sediment/Surface Water Sample Number(s): SB-01-0-1, SB-01-3-4, SB-01-3-9, SB-01-11-12, SB-01-14-15

Sampling Date: 5-19-15 SB-01-17-18, SB-01-23-24, SW-01, SB-01, SW-03, SW-08, SB-02

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Packing, Storing, and Shipment of Samples

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-19-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): SB-01 / MW-02 S

Date: 5-19-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

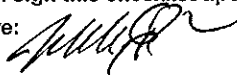
Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-19-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Boring/Monitoring Well Number: S3-01 / MW-025Starting Date: 5-19-15Date: 5-19-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: SB-01 / MW-025

Starting Date: 5-19-15

Date: 5-19-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Boring not completed yet.

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-19-15

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: *SB-01 / MW-023*Sampling Date: *5-19-15*

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A**General**

1. Were new protective gloves worn between sampling locations and/or intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were samples collected using methods described in the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were sample containers filled in the correct order?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was sampling equipment appropriate for the purpose and site conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were procedures for collecting QA/QC samples followed as per the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were sampling locations properly identified by land survey?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Were bottles adequately protected from contamination prior to sample collection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ground / Surface Water for Chemical Analysis

9. Were ground water parameters stable before sample collection (as per FSP)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were turbidity readings below 50 NTU (or if all other field parameters are stable and turbidity can not be lowered below 50 NTU, were turbidity readings within + or - 10% over three, five-minute readings)? Note: approval must be obtained from the project geologist and project manager prior to sampling in turbid conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was low-flow sampling conducted in accordance with the approved SAP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sediment for Chemical Analysis

14. Were sample collected according to the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was a field sampling form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was headspace in sample containers for volatiles eliminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Soil for Chemical Analysis

18. Were sample collected according to the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was a field sampling form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was headspace in sample containers for volatiles eliminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: SB-01 / MW-023

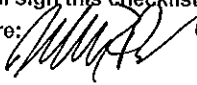
Sampling Date: 5-19-15

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-19-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-18-15, S-5

Date: 5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	Mini Rm 2000 PID RKE LEL			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [Signature]

Date: 5-18-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5 - 5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/AField Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR & COL)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-18-15

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-03 & SB-07

Surface Soil/Sediment/Surface Water Sample Number(s): SB-03-0-1, SB-03-3-4, SB-03-9-10, SB-03-11-12,

Sampling Date: 5-18-15 SB-03-14-15, SB-03-18-19, SB-07-0-1, SB-07-3-4, SB-07-9-10, SB-07-12-13,
SB-07-26-27, SB-07-28-29

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).


If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Packing, Storing, and Shipment of Samples

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-18-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): 5B-03, 5B-07

Date: 5-18-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

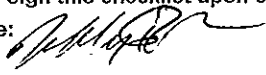
Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions: N/A

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-18-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Boring/Monitoring Well Number: S8-03 & S8-07Starting Date: 5-18-15Date: 5-18-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Borehole Logging**

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: SB-03 & SB-07

Starting Date: 5-12-15

Date: 5-18-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

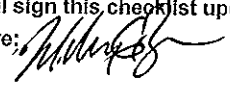
	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-18-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-17-15

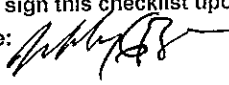
Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHPP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	<u>Mini Rar 2000 P10</u> <u>RKE 4 Gas</u>			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-17-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A


Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-17-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: **S-5**Boring/Monitoring Well Number(s): **MW-02**Sampling Date: **2/1/8**

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 3-5Boring/Monitoring Well Number(s): MW-02Sampling Date: 3/1/15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

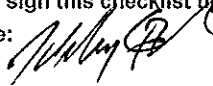
Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: Date: 5-17-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S - 5

Boring/Monitoring Well Number: MW-02

Starting Date: 5-17-15

Date: 5-17-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-02

Starting Date: 5-17-15

Date: 5-17-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.


	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-17-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Monitoring Well Number: MW-02Starting Date: 5-17-15Completion Date: 5-17-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well? <i>Modified - only by USACE</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Monitoring Well Number: MW-02

Starting Date: 5/17/15

Completion Date: 5/17/15

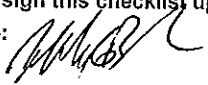
Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-17-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-16-15, S-5

Date: ↓

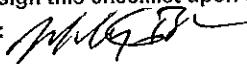
Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	Mini Rad PED RKE LEL - 4 gas			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-16-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A


Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-16-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-06

Sampling Date: 1/1/01

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Boring/Monitoring Well Number(s): MW-06Sampling Date: 1/18

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: Date: 5-16-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-06

Starting Date: 5-16-15

Date: 5-16-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	✓			
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	✓			
3. Was the log scale 1 inch = 1 foot?	✓			
4. Were logs completed in the field (originals)?	✓			
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	✓			
* Depositional type (alluvium, till, loess, etc.)	✓			
* Depths/Heights recorded in tenths of feet?	✓			
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	✓			
* Soils classified as per USCS and fully described with numerical percents of constituents?	✓			
* Soil moisture content and texture or cohesiveness?	✓			
* Soil color described using the Munsell System?	✓			
6. Was general information (top of form MRK-55) completed?	✓			
7. Was the log signed by person preparing the log?	✓			
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	✓			
9. Were start and completion dates and time included for boring and well installation activities?	✓			
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	✓			
11. Were depths at which free water was encountered and stabilized water levels recorded?				✓
12. Were soil sample depths recorded?				✓
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	✓			
14. Were soil sampling methods and recovery recorded?	✓			

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-04

Starting Date: 5-16-15

Date: 5-16-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-16-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-04

Starting Date: 5-16-15

Completion Date: 5-16-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well? Adjusted by USAE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-06

Starting Date: 5-16-15

Completion Date: 5-16-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-16-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-15-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	Mini Rae 2000 PFD RKE GX 1000 LCL			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date: 5-15-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A


Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-15-15

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: **S-5**

Boring/Monitoring Well Number(s): **SB-02 & SB-05R**

Surface Soil/Sediment/Surface Water Sample Number(s): **SB-02/SB-0-1, SB-02/SB-2-3, SB-02/SB-8-9**

Sampling Date: **5-15-15** **SB-02/SB-25-26, SB-05R/SB-12-13, SB-05R/SB-20-21**

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Packing, Storing, and Shipment of Samples

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-15-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): SB-02 & SB-05R

Date: 5-15-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

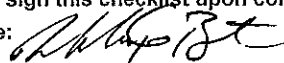
Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date: 5-15-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: SB-01 & SB-05R

Starting Date: 5-15-15

Date: 5-15-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: SB-01 & SB-05R

Starting Date: 5-15-15

Date: 5-15-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-15-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: ~~S3-06~~ S3-05

Date: 5-14-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	Mini Rad PED RISE 4 Gas			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

[Signature]

Date: 5-14-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: SB-06, SB-05, & site wide

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-14-15

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: SD-10, SD-11, SB-05, SB-06

Boring/Monitoring Well Number(s): SB-05, SB-06

Surface Soil/Sediment/Surface Water Sample Number(s): ~~SB-05, SB-06~~ ^{SB} SD-10, SW-10, SD-11, SW-11

Sampling Date: 5-14-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

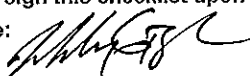
Yes No N/O N/A

Packing, Storing, and Shipment of Samples

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-14-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): SB-05, SB-06

Date: 5-14-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date: 5-14-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: SB-05, SB-06

Boring/Monitoring Well Number: SB-05, SB-06

Starting Date: 5-14-15

Date: 5-14-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: SB-05 & SB-06

Boring/Monitoring Well Number: SB-05, SB-06

Starting Date: 5-14-15

Date: 5-14-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-14-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: *Forbes S-5 Atlas*

Date: *5-13-15*

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List Instruments used at the Site: <i>Mini Ram 2000 PID</i> <i>RICE 4 Gas</i>				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: *[Signature]*

Date: *5-13-15*

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: *Forbes Atlas : S-5*

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (<i>DQCR</i>)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: Date: *5-13-15*

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: *Forbes S-5*Boring/Monitoring Well Number(s): *MW-01*Sampling Date: *5-13-15*

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: *Forbes S-5*

Boring/Monitoring Well Number(s): *MW-01*

Sampling Date: *-*

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Rotary Wash

16. Was a sample of the proposed drilling water analyzed?				<input checked="" type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>			
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>			
19. Was bentonite used?	<input checked="" type="checkbox"/>			
20. Were any additives used besides bentonite?		<input checked="" type="checkbox"/>		
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>			
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>			

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>			
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>			
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>			
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>			
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>			
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: *[Signature]*

Date: *5-13-15*

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: *Forbes S-5*Boring/Monitoring Well Number: *mw-01*Starting Date: *5-13-15*Date: *5-13-15*

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were soil sample depths recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: *Forbes S-5*Monitoring Well Number: *MW-01*Starting Date: *5-13-15*

Completion Date:

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Work plan specifies high solids bentonite grout.

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: *Forbes S-5 Atlas*

Monitoring Well Number: *mw-01*

Starting Date: *5-13-15*

Completion Date:

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective

Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: *[Signature]*

Date: *5-13-15*

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Date: 5-12-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	Mini Rae 2000 PID RKI GX1000 4 GAS			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

[Signature]

Date: 5-12-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S - 5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A


Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-12-15

SAFETY AND HEALTH CHECKLIST

Date: 5-12-15

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Personnel Observed and Locations: Trant crew - site wide


Complete weekly for each site. Answer each question by checking the appropriate column (yes, no, or N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

14. Is the following emergency equipment located at each site:				
* Fire extinguisher?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Eyewash (15 minutes fresh water)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Communications (walkie-talkie or phone)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* First aid kit?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Is the buddy system in use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Is air monitoring equipment being used appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was a random employee asked if he/she know site hazard and emergency procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Is the drill rig kill switch clearly marked and easily accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-12-15

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-01D

Starting Date: 5-16-15

Completion Date: 5-18-15


Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-18-15

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-02D

Starting Date: 5-20-15

Completion Date: 5-31-15

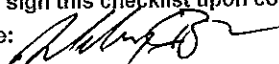
Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-31-15

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-023

Starting Date: 5-30-15

Completion Date:

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.


Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-03D

Starting Date: 6-5

Completion Date:


Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-035

Starting Date:

Completion Date:

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?					
2. Were methods of development in accordance with the Work Plan?					
3. Was final development water free of sand and drilling fluids?					
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?					
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?					
6. Was well development information accurately recorded on the well development form?					
7. Were color photographs taken of the water after completion of development?					

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-040

Starting Date: 6-3-15

Completion Date: 6-8-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 6-8-15

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-045

Starting Date: 6-5

Completion Date:


Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5


Site: S-5Monitoring Well Number MW-05DStarting Date: 6-3-15Completion Date: 6-8-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General	Yes	No	N/O	N/A
1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: Date: 6-8-15

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Monitoring Well Number: MW-06D

Starting Date: 5-17-15

Completion Date:

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Monitoring Well Number: MW-065

Starting Date: 5-31-15

Completion Date: 6-8-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-8-15

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-075

Starting Date: 5-30-15

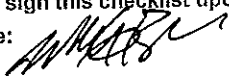
Completion Date: 5-31-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General	Yes	No	N/O	N/A
1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-31-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 6-5

Date: 6-10-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: <u>LEL 4 GAS - RKI</u>				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [Signature]

Date: 6-10-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DCCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

6-10-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-9-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

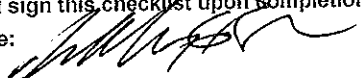
Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	PED, LEL, pH, Cond, Turb			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date: 6-9-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-S

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.


Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR, COL)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-9-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-035

Sampling Date: 6-9-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: **S-5**Boring/Monitoring Well Number(s): **MW-033**Sampling Date: **6-9-15**

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.


Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: Date: **6-9-15**

SAFETY AND HEALTH CHECKLISTDate: **6-9-15**Project Name/Location: **Former Forbes Atlas Missile Site S-5**Site: **S-5**Personnel Observed and Locations: **Site wide - Trout & Bmco**

Complete weekly for each site. Answer each question by checking the appropriate column (yes, no, or N/A).
If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Documentation**

1. Is the Site Health and Safety Plan (SSHP) on the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the SSHP been reviewed, dated, and signed within the last year?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Are the tasks being completed reflected in the hazard task analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is there a written acknowledgement that all employees, including subcontractors have been briefed and read the SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Are the following training records current and available:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* 40-Hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* 24 Hours Supervised Field Experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* 8-Hour HAZWOPER Annual Refresher?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* CPR/First Aid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* 8-Hour Hazardous Waste Site Supervisor, and refresher?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Initial Site Health and Safety Briefing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Site Health and Safety Briefing for each location or site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Are emergency maps posted at the site and maintained in vehicles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were daily safety checklists completed and fire extinguishers checked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were applicable Material Safety Data Sheets at the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Are documents current and available that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were daily air monitoring equipment calibrations recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Are respirator fit test records available and current?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Observations

12. Are exclusion zones and contaminant reduction zone adequately marked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Is required personal protective equipment available and correctly used, maintained, and stored?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IDW MANAGEMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-035

Date: 6-9-15

Complete weekly. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Investigation-Derived Waste Management

1. Was all IDW managed according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were soil cuttings, drilling fluids, decon water, development water, and PPE containerized in 55-gallon drums?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all containers properly labeled and placed on pallets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the Drum Inventory Worksheet completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were all containers in satisfactory condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-9-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-035

Date: 6-7-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-9-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-035

Starting Date: 6-7-15

Date: 6-7-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-035

Starting Date: 6-9-15

Date: 6-9-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

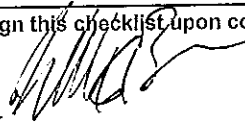
	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-9-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-035

Starting Date: 6-9-15

Completion Date: 6-9-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Monitoring Well Number: MW-035

Starting Date: 6-9-15

Completion Date: 6-9-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-9-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-8-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	pH, Cond, Turb			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-8-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

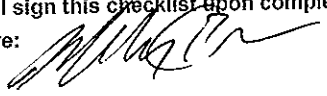
Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-8-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-5-15


Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: pit, Cond, Turb				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-5-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.


Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	(DQCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-5-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 6-3-15
Date: 5-5-12

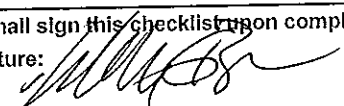
Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: pit, Cond, Turb				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-3-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	(DQCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

6-3-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-2-15

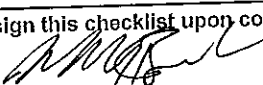
Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: MINI RAC PID RKI LEL				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-2-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	(DQCRP LOC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

[Handwritten Signature]

Date:

6-2-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-09/MW-03D

Sampling Date: 6-2-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-09 / MW-03D

Sampling Date: 6-2-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Rotary Wash

16. Was a sample of the proposed drilling water analyzed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-2-15

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-09

Surface Soil/Sediment/Surface Water Sample Number(s): SB-09-0-1, SB-09-2-3, SB-09-6-7, SB-09-12-13, SB-09-15-16,

Sampling Date: SB-09-17-18

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).
If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

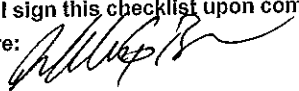
Yes No N/O N/A

Packing, Storing, and Shipment of Samples

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

6-2-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): SB-09 / MW-03D

Date: 6-2-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

6-2-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: SB-09 / MW-030

Starting Date: 6-2-15

Date: 6-2-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: SB-09/MW-03D

Starting Date: 6-2-15

Date: 6-2-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-2-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-03D

Starting Date: 6-2-15

Completion Date: 6-2-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-03D

Starting Date: 6-2-15

Completion Date: 6-2-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-2-15

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: MW-03D

Sampling Date: 6-2-15

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A**General**

1. Were new protective gloves worn between sampling locations and/or intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were samples collected using methods described in the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were sample containers filled in the correct order?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was sampling equipment appropriate for the purpose and site conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were procedures for collecting QA/QC samples followed as per the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were sampling locations properly identified by land survey?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were bottles adequately protected from contamination prior to sample collection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ground / Surface Water for Chemical Analysis

9. Were ground water parameters stable before sample collection (as per FSP)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were turbidity readings below 50 NTU (or if all other field parameters are stable and turbidity can not be lowered below 50 NTU, were turbidity readings within + or - 10% over three, five-minute readings)? Note: approval must be obtained from the project geologist and project manager prior to sampling in turbid conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was low-flow sampling conducted in accordance with the approved SAP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sediment for Chemical Analysis

14. Were sample collected according to the FSP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Soil for Chemical Analysis

18. Were sample collected according to the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was headspace in sample containers for volatiles eliminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: MW-03D

Sampling Date: 6-2-15

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date: 6-2-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-1-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

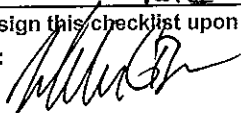
Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	Mini RAMPED RKT LEL			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date: 6-1-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR & COC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 8-1-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-10 | MW-045

Sampling Date: 6-1-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 3-5

Boring/Monitoring Well Number(s): SB-10 (MW-045)

Sampling Date: 6-1-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Rotary Wash

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

6-1-15

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-10/MW-043

Surface Soil/Sediment/Surface Water Sample Number(s): SB-10-0-1, SB-10-3-4, SB-10-8-7, SB-10-12-13, SB-10-18-19,

Sampling Date: 6-1-15 SB-10-21-22

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Packing, Storing, and Shipment of Samples

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-1-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-045

Date: 6-1-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.


Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-1-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Boring/Monitoring Well Number: SB-10/MW043Starting Date: 6-1-15Date: 6-1-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Borehole Logging**

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: 5B-10/mw-045

Starting Date: 6-1-15

Date: 6-1-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

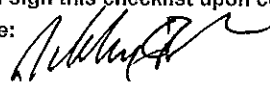
	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-1-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-045

Starting Date: 6-1-15

Completion Date: 6-1-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-045

Starting Date: 6-1-15

Completion Date: 6-1-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-1-15

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: MW-045 / 58-10

Sampling Date: 6-1-15

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

General

1. Were new protective gloves worn between sampling locations and/or intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were samples collected using methods described in the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were sample containers filled in the correct order?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was sampling equipment appropriate for the purpose and site conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were procedures for collecting QA/QC samples followed as per the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were sampling locations properly identified by land survey?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were bottles adequately protected from contamination prior to sample collection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ground / Surface Water for Chemical Analysis

9. Were ground water parameters stable before sample collection (as per FSP)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were turbidity readings below 50 NTU (or if all other field parameters are stable and turbidity can not be lowered below 50 NTU, were turbidity readings within + or - 10% over three, five-minute readings)? Note: approval must be obtained from the project geologist and project manager prior to sampling in turbid conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was low-flow sampling conducted in accordance with the approved SAP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sediment for Chemical Analysis

14. Were sample collected according to the FSP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Soil for Chemical Analysis

18. Were sample collected according to the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was a field sampling form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21. Was headspace in sample containers for volatiles eliminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: MW-043/SB-10

Sampling Date: 6-1-15

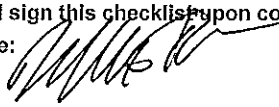
Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

6-1-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-31-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

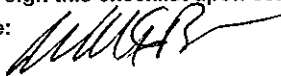
Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHPP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List Instruments used at the Site:	Min: Ram 2000 PEO RKE LEC			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-31-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-31-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Boring/Monitoring Well Number(s): MW-040

Sampling Date: 5-31-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-04D

Sampling Date: 5-31-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Rotary Wash

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-31-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s):

Date:

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-31-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-04A

Starting Date: 5-31-15

Date: 5-31-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-040

Starting Date: 5-31-15

Date: 5-31-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-31-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-040

Starting Date: 5-31-15

Completion Date: 5-31-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-040

Starting Date: 5-31-15

Completion Date: 5-31-15

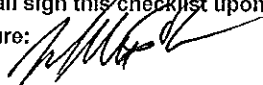
Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-31-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-30-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	Mini-Rad 2000 PID RKE LEL			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 5-30-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S - 5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

[Signature]

Date:

5-30-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-05 D

Sampling Date: 5-30-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-05 D

Sampling Date: 5-30-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

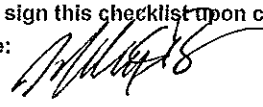
Rotary Wash

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-30-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-05D

Date: 5-30-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-30-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-050

Starting Date: 5-30-15

Date: 5-30-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-05D

Starting Date: 5-30-15

Date: 5-30-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-30-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-05D

Starting Date: 5-30-15

Completion Date: 5-30-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Monitoring Well Number: MW-05DStarting Date: 5-30-15Completion Date: 5-30-15

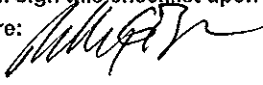
Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: Date: 5-30-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-29-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: Mini Rce PSD				
RKE LEL				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-29-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A


Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR & CAC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-29-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-08/MW-065

Sampling Date: 5-29-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-08/MW-065

Sampling Date: 5-29-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Rotary Wash

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-29-15

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-08/MW-065

Surface Soil/Sediment/Surface Water Sample Number(s): SB-08-0-1, SB-08-4-5, SB-08-8-9, SB-08-24-25

Sampling Date: 5-29-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Packing, Storing, and Shipment of Samples

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-29-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): SB-08/MW-063

Date: 5-29-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-29-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-063/SB-08

Starting Date: 5-29-15

Date: 5-29-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Boring/Monitoring Well Number: SB-08/MW-063Starting Date: 5-29-15Date: 5-29-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: Date: 5-29-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-063

Starting Date: 5-29-15

Completion Date: 5-29-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-063

Starting Date: 5-29-15

Completion Date: 5-29-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-29-15

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: MW-065

Sampling Date: 5-29-15

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

General

1. Were new protective gloves worn between sampling locations and/or intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were samples collected using methods described in the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were sample containers filled in the correct order?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was sampling equipment appropriate for the purpose and site conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were procedures for collecting QA/QC samples followed as per the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were sampling locations properly identified by land survey?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were bottles adequately protected from contamination prior to sample collection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ground / Surface Water for Chemical Analysis

9. Were ground water parameters stable before sample collection (as per FSP)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were turbidity readings below 50 NTU (or if all other field parameters are stable and turbidity can not be lowered below 50 NTU, were turbidity readings within + or - 10% over three, five-minute readings)? Note: approval must be obtained from the project geologist and project manager prior to sampling in turbid conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was low-flow sampling conducted in accordance with the approved SAP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sediment for Chemical Analysis

14. Were sample collected according to the FSP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Soil for Chemical Analysis

18. Were sample collected according to the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was a field sampling form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was headspace in sample containers for volatiles eliminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: MW-065

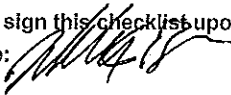
Sampling Date: 5-29-15

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-29-15

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-28-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

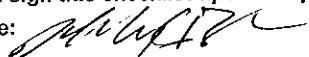
Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List Instruments used at the Site:	Mini Rae 2000 PID RKI LEL 4 Gas			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date: 5-28-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S - 5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

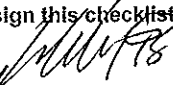
Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR & COC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-28-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-075 / SB-04

Sampling Date: 5-28-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-075 / SB-04

Sampling Date: 5-28-15

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

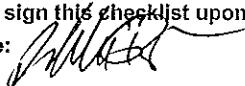
Rotary Wash

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-28-15

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): SB-04

Surface Soil/Sediment/Surface Water Sample Number(s): SB-04-0-1, SB-04-7-8, SB-04-13-14, SB-04-16-17,

Sampling Date: SB-04-19-20, SB-04-20-21

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Packing, Storing, and Shipment of Samples

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [Signature]

Date: 5-28-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-073 / SB-04

Date: 5-28-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-28-15

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-075 / SB-04

Starting Date: 5-28-15

Date: 5-28-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	✓			
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	✓			
3. Was the log scale 1 inch = 1 foot?	✓			
4. Were logs completed in the field (originals)?	✓			
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	✓			
* Depositional type (alluvium, till, loess, etc.)	✓			
* Depths/Heights recorded in tenths of feet?	✓			
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	✓			
* Soils classified as per USCS and fully described with numerical percents of constituents?	✓			
* Soil moisture content and texture or cohesiveness?	✓			
* Soil color described using the Munsell System?	✓			
6. Was general information (top of form MRK-55) completed?	✓			
7. Was the log signed by person preparing the log?	✓			
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	✓			
9. Were start and completion dates and time included for boring and well installation activities?	✓			
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	✓			
11. Were depths at which free water was encountered and stabilized water levels recorded?	✓			
12. Were soil sample depths recorded?	✓			
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	✓			
14. Were soil sampling methods and recovery recorded?	✓			

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Boring/Monitoring Well Number: MW-075 | SB-04

Starting Date: 5-28-15

Date: 5-28-15

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-28-15

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-075

Starting Date: 5-28-15

Completion Date: 5-28-15

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-075

Starting Date: 5-28-15

Completion Date: 5-28-15

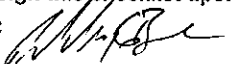
Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-28-15

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: ~~S-5~~ MW-075

Sampling Date: 5-28-15

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

General

1. Were new protective gloves worn between sampling locations and/or intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were samples collected using methods described in the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were sample containers filled in the correct order?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was sampling equipment appropriate for the purpose and site conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were procedures for collecting QA/QC samples followed as per the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were sampling locations properly identified by land survey?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Were bottles adequately protected from contamination prior to sample collection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ground / Surface Water for Chemical Analysis

9. Were ground water parameters stable before sample collection (as per FSP)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Were turbidity readings below 50 NTU (or if all other field parameters are stable and turbidity can not be lowered below 50 NTU, were turbidity readings within + or - 10% over three, five-minute readings)? Note: approval must be obtained from the project geologist and project manager prior to sampling in turbid conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Was low-flow sampling conducted in accordance with the approved SAP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sediment for Chemical Analysis

14. Were sample collected according to the FSP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Soil for Chemical Analysis

18. Were sample collected according to the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was headspace in sample containers for volatiles eliminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: *MW-075*

Sampling Date: *5-28-15*

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: *[Signature]*

Date: *5-28-15*

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-27-15

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

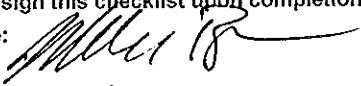
Yes No N/O N/A

Instrument Calibration

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	Mini Ruc 2000 PLO RKE LCL			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

5-27-15

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S - 5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC? (DQCR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

5-27-15

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: **S-S**Boring/Monitoring Well Number(s): **MW-025**Sampling Date: **1/1/01**

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-023

Sampling Date: 5/14

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-27-15

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-025

Date: 5-27-15

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions: N/A

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-27-15

May 2016

QC Checklists

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Field Documentation

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-24-16

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

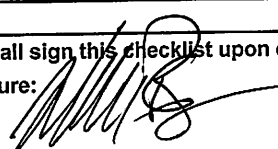
Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Construction Diagrams?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Well Development Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-25-14

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* Project Photograph Log (in Log Book)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

5-26-14

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* Project Photograph Log (in Log Book)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List additional field forms completed:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-1-16

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-2-14

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

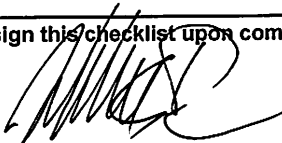
Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-3-14

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-4-16

FIELD DOCUMENTATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Field Documentation**

1. Was all original field data, except boring logs, recorded in black indelible ink?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were logbooks filled out properly; accurately recounting the day's events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were all field forms completed and information accurately recorded:				
* DQCR's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Borehole Logs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Construction Diagrams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Well Development Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Sampling Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Water Level Forms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Chain of Custody Forms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
* Field Log Books?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Project Photograph Log (in Log Book)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Daily Air Monitoring Record?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List additional field forms completed:

4. Was field documentation forwarded to office for peer review and QC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 6-5-16

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-24-16

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Instrument Calibration**

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: <u>PID & LEL</u>				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-24-16

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-25-14

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Instrument Calibration**

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: PID & LEL				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-25-14

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 5-26-16

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Instrument Calibration**

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: PID & LEL			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

5-26-16

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-1-16

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Instrument Calibration**

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: PSD, L&L, pH, Cond, Turb			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-1-16

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-2-16

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Instrument Calibration**

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	PID, H ₂ L, pH, Cond, Turb			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-2-16

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-3-16

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Instrument Calibration**

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: PED, LEL, pH, Cond, Turb			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-3-16

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-4-16

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Instrument Calibration**

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site: pH, Cond, Turb			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-4-16

INSTRUMENT CALIBRATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: 6-5-16

Complete daily. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Instrument Calibration**

1. Were all field instruments calibrated properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the Field Calibration Forms list all calibration events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List instruments used at the Site:	pH, Lead, Turb		

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-5-16

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-103

Sampling Date: 5-24-16

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-105

Sampling Date: 5-24-16

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?					✓
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	✓				
18. Was the water circulated in portable tanks?	✓				
19. Was bentonite used?	✓				
20. Were any additives used besides bentonite?		✓			
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	✓				
22. Was the bentonite supplier, brand and type recorded?	✓				

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	✓				
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	✓				
25. Was depth to ground water measurements collected with an electronic tape?	✓				
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	✓				
27. Was the Kelly Bar marked to verify depth during drilling?	✓				
28. Was the boring open to the bottom?	✓				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

5-24-16

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-115

Sampling Date: 5-25-16

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-115

Sampling Date: 5-25-16

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?					✓
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	✓				
18. Was the water circulated in portable tanks?	✓				
19. Was bentonite used?	✓				
20. Were any additives used besides bentonite?		✓			
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	✓				
22. Was the bentonite supplier, brand and type recorded?	✓				

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	✓				
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	✓				
25. Was depth to ground water measurements collected with an electronic tape?	✓				
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	✓				
27. Was the Kelly Bar marked to verify depth during drilling?	✓				
28. Was the boring open to the bottom?	✓				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-25-16

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-125

Sampling Date: 5-26-16

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-125

Sampling Date: 5-26-16

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-26-16

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-135

Sampling Date: 6-1-14

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-135

Sampling Date: 6-1-14

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?					✓
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	✓				
18. Was the water circulated in portable tanks?	✓				
19. Was bentonite used?	✓				
20. Were any additives used besides bentonite?		✓			
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	✓				
22. Was the bentonite supplier, brand and type recorded?	✓				

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	✓				
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	✓				
25. Was depth to ground water measurements collected with an electronic tape?	✓				
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	✓				
27. Was the Kelly Bar marked to verify depth during drilling?	✓				
28. Was the boring open to the bottom?	✓				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-1-14

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-093

Sampling Date: 6-2-16

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW095

Sampling Date: 6-2-16

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Was the water circulated in portable tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was bentonite used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were any additives used besides bentonite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the bentonite supplier, brand and type recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Was depth to ground water measurements collected with an electronic tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Was the Kelly Bar marked to verify depth during drilling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the boring open to the bottom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-2-16

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-085

Sampling Date: 6-3-14

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Are chemically inert hoses (i.e. nylon, PVC, polyethylene) used on all water equipment (i.e. steam cleaner, submersible pumps, Pad water tanks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are there any fluid leaks on drilling rig and associated equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. If so, have oil absorbent pads been used to contain leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Was sampling equipment transported or stored away from fuel sources or fuel spill areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was clean equipment wrapped in visqueen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were clean and dirty equipment stored or transported separately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did sampling equipment such as auger flights, drill rods, and split spoon samplers come in contact with lubricants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drilling Rig

8. Was the type and model of the drilling rig recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the type of lubricating oil recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were names and titles of crew recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were drill stem augers and bit diameters recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were volumes of drilling fluids lost to formation accounted for and recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were rig start, stop, down times, and penetration rates recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was split spoon sampler used on deep MW and test holes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Were all drilling tools and cables inspected daily prior to their use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DRILLING METHODS CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-085

Sampling Date: 6-3-16

Complete daily for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Rotary Wash**

16. Was a sample of the proposed drilling water analyzed?					✓
17. Was the source of drilling water approved by the USACE in writing before mobilization to the Site?	✓				
18. Was the water circulated in portable tanks?	✓				
19. Was bentonite used?	✓				
20. Were any additives used besides bentonite?		✓			
21. If bentonite or other additives were added to the water, was the situation requiring their use documented on the boring log?	✓				
22. Was the bentonite supplier, brand and type recorded?	✓				

Depth Measurements Precision and Accuracy

23. Was the well installed to the depth defined in the Work Plan?	✓				
24. Was the depth of each boring verified by measuring with a fiberglass or steel tape?	✓				
25. Was depth to ground water measurements collected with an electronic tape?	✓				
26. Were depth measurements verified by estimating the amount of drill rods or by taking multiple measurements?	✓				
27. Was the Kelly Bar marked to verify depth during drilling?	✓				
28. Was the boring open to the bottom?	✓				

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-3-16

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): N/A (IDW)

Surface Soil/Sediment/Surface Water Sample Number(s): IDW-WW-060316

Sampling Date: 6/3/16

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Packing, Storing, and Shipment of Samples**

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-3-16

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-133 / SB-12

Surface Soil/Sediment/Surface Water Sample Number(s): SB-12-0-1, SB-12-3-4, SB-12-6-7

Sampling Date: 6/1/14

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Packing, Storing, and Shipment of Samples**

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6/1/14

PACKING, STORING, AND SHIPMENT OF SAMPLES CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Boring/Monitoring Well Number(s): MW-125/SB-11Surface Soil/Sediment/Surface Water Sample Number(s): SB-11-0-1, SB-11-5-4, SB-11-4-15Sampling Date: 5/26/14FDW-00-052614

Complete daily. Answer each question by checking the appropriate column (yes, no, or not applicable N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Packing, Storing, and Shipment of Samples**

1. Were the samples handled according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the pH of samples requiring pH adjustment verified in the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the samples remain on ice from collection until cooler was taped for shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were COC forms filled out accurately and completely including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were COC forms signed and dated by the preparer and the form taped to the inside of the cooler lid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was a shipping label attached to the cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was custody documentation intact until receipt by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5/26/14

SAFETY AND HEALTH CHECKLIST

Date: 5-24-16

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Personnel Observed and Locations: Trout, Drill site

Complete weekly for each site. Answer each question by checking the appropriate column (yes, no, or N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Documentation

1. Is the Site Health and Safety Plan (SSHP) on the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the SSHP been reviewed, dated, and signed within the last year?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Are the tasks being completed reflected in the hazard task analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is there a written acknowledgement that all employees, including subcontractors have been briefed and read the SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Are the following training records current and available:				
* 40-Hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* 24 Hours Supervised Field Experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* 8-Hour HAZWOPER Annual Refresher?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* CPR/First Aid?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* 8-Hour Hazardous Waste Site Supervisor, and refresher?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Initial Site Health and Safety Briefing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Site Health and Safety Briefing for each location or site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Are emergency maps posted at the site and maintained in vehicles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were daily safety checklists completed and fire extinguishers checked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were applicable Material Safety Data Sheets at the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Are documents current and available that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were daily air monitoring equipment calibrations recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Are respirator fit test records available and current?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observations				
12. Are exclusion zones and contaminant reduction zone adequately marked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Is required personal protective equipment available and correctly used, maintained, and stored?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAFETY AND HEALTH CHECKLIST

Date: 5-24-16

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Personnel Observed and Locations: Trout, Drill site

Complete weekly for each site. Answer each question by checking the appropriate column (yes, no, or N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

14. Is the following emergency equipment located at each site:				
* Fire extinguisher?	/			
* Eyewash (15 minutes fresh water)?	/			
* Communications (walkie-talkie or phone)?	/			
* First aid kit?	/			
15. Is the buddy system in use?	/			
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	/			
17. Is air monitoring equipment being used appropriately?	/			
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	/			
19. Was a random employee asked if he/she know site hazard and emergency procedures?	/			
20. Is the drill rig kill switch clearly marked and easily accessible?	/			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

5-24-16

SAFETY AND HEALTH CHECKLIST

Date: 6-1-14

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Personnel Observed and Locations: Drill site, Traut

Complete weekly for each site. Answer each question by checking the appropriate column (yes, no, or N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Documentation

1. Is the Site Health and Safety Plan (SSHP) on the Site?	/			
2. Has the SSHP been reviewed, dated, and signed within the last year?	/			
3. Are the tasks being completed reflected in the hazard task analysis?	/			
4. Is there a written acknowledgement that all employees, including subcontractors have been briefed and read the SSHP?	/			
5. Are the following training records current and available:				
* 40-Hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	/			
* 24 Hours Supervised Field Experience?	/			
* 8-Hour HAZWOPER Annual Refresher?	/			
* CPR/First Aid?	/			
* 8-Hour Hazardous Waste Site Supervisor, and refresher?	/			
* Initial Site Health and Safety Briefing?	/			
* Site Health and Safety Briefing for each location or site?	/			
6. Are emergency maps posted at the site and maintained in vehicles?	/			
7. Were daily safety checklists completed and fire extinguishers checked?	/			
8. Were applicable Material Safety Data Sheets at the Site?	/			
9. Are documents current and available that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment?	/			
10. Were daily air monitoring equipment calibrations recorded?	/			
11. Are respirator fit test records available and current?	/			

Observations

12. Are exclusion zones and contaminant reduction zone adequately marked?	/			
13. Is required personal protective equipment available and correctly used, maintained, and stored?	/			

SAFETY AND HEALTH CHECKLIST

Date: 6-1-16

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Personnel Observed and Locations: Trant, Drill site

Complete weekly for each site. Answer each question by checking the appropriate column (yes, no, or N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

14. Is the following emergency equipment located at each site:				
* Fire extinguisher?	✓			
* Eyewash (15 minutes fresh water)?	✓			
* Communications (walkie-talkie or phone)?	✓			
* First aid kit?	✓			
15. Is the buddy system in use?	✓			
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	✓			
17. Is air monitoring equipment being used appropriately?	✓			
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	✓			
19. Was a random employee asked if he/she know site hazard and emergency procedures?	✓			
20. Is the drill rig kill switch clearly marked and easily accessible?	✓			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-1-16

IDW MANAGEMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Boring/Monitoring Well Number(s): MW-85, MW-95, MW-135Date: 6-1-14 to 6-5-14

Complete weekly. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Investigation-Derived Waste Management**

1. Was all IDW managed according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were soil cuttings, drilling fluids, decon water, development water, and PPE containerized in 55-gallon drums?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>And lined roll-off</u>				
3. Were all containers properly labeled and placed on pallets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the Drum Inventory Worksheet completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were all containers in satisfactory condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-5-14

IDW MANAGEMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number(s): MW-105, MW-115, MW-125

Date: 5-24-16 to 5-26-16

Complete weekly. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Investigation-Derived Waste Management**

1. Was all IDW managed according to the project plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were soil cuttings, drilling fluids, decon water, development water, and PPE containerized in 55-gallon drums?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
And lined Roll-off				
3. Were all containers properly labeled and placed on pallets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the Drum Inventory Worksheet completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were all containers in satisfactory condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 5/26/16

MOBILIZATION/DEMOBILIZATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: mobil 5/24/16, Demobe 6/15/16

Complete as indicated. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Site Access and Security**

Complete 4 weeks prior to start of field activities.

1. Has a copy of the Right of Entry Permit(s) been received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Are the time frames on the Right of Entry Permits adequate for the entire job including IDW disposal?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Permits and Licenses

Complete 4 weeks prior to start of fieldwork.

3. Are all subcontractors licensed to operate in the state?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Are license numbers of subcontractors recorded in the project files?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Have subcontractors provided proof of insurance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Have variances been obtained from the state?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, provide a list of variances obtained: Quick GRP, N SEAL				

Coordination with Property Owners and Tenants

Complete 4 weeks before start of field activities.

7. Has the property owner been contacted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Did the property owner designate a contractor staging area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Did the property owner designate an IDW staging area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Did the property owner approve a source for water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Coordination with Environmental Authorities

Complete within 4 weeks of notice to proceed.

11. Has the State approved the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Has the State been informed of the planned sampling events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Has USEPA approved the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Has USEPA been informed of the planned sampling events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Safety Planning and Equipment

Complete 1 week before start of field activities.

15. Has the SSHP been submitted to subcontractors for review?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Have all personnel read and signed the SSHP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the local hospital contacted to verify the phone number and address?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Can the hospital treat anticipated potential chemical exposures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Have all field personnel been fit-tested for respirator use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MOBILIZATION/DEMOBILIZATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: Nov 5/24/16, Dec 6/15/16

Complete as indicated. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

20. Were all training certificates, including subcontractors, in a file to take to the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Are all training certificates current?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Are all MSDS's in a file to take to the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Are all required instruments reserved and complete with calibration standards and manuals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Do the instruments meet manufacturer maintenance and calibration standards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the PID have the correct lamp?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the LEL meter have the correct sensors?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Are the detector tubes current and stored properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Logistical Planning

Complete within 1 week of notice to proceed.

28. Have the Work plan documents been approved by USACE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Has the SSHP been approved by Health and Safety Services?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Has notice to proceed from the USACE been received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Are the project personnel available and scheduled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Are subcontractors available?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Do subcontractors SOWs correspond to the approved Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Has the laboratory agreed to the planned sample volume load?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Has the bottle order been placed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Have correct sample containers been received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Has USACE been notified of schedule?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Utility Clearances

Complete not less than 1 week before fieldwork is scheduled to begin.

38. Has the State or Local utility clearance agency been contacted and a meeting scheduled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Has a representative from each notified utility called to confirm the utility meeting?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Was a utility work authorization number recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Was the property owner asked about the existence of any underground utilities or tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Has a UXO survey been conducted at the site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

MOBILIZATION/DEMOBILIZATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Date: mobilize 5/24/14, Demobilize 6/5/14

Complete as indicated. Answer each question by checking the appropriate column (yes, no, or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

43. If yes to the above question, is a report available?				✓
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Environmental Site Protection

44. Are drilling and sampling locations accessible without property damage?	✓			
45. Is work area limited to prevent property damage?	✓			
46. Is IDW area greater than 100 feet away from a major stream, tributary, or drinking water well?	✓			
47. If field activities damage property, will measures be taken to restore the Site (explain below)?	✓			

Demobilization

48. Was the site returned, as much as possible, to its original condition?	✓			
49. Was each work area policed for trash?	✓			
50. Did the site point of contact inspect the site?	✓			
51. Was the integrity of each drum of IDW inspected?	✓			

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6/5/14

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-085

Date: 6-3-14

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date: 6-3-14

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-095

Date: 6-2-16

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-2-16

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-105

Date: 5-24-16

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-24-16

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-115

Date: 5-25-14

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-25-14

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-125

Date: 5-26-16

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

5-26-16

DECONTAMINATION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Boring/Monitoring Well Number(s): MW-13 S

Date: 6-1-16

Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

Equipment

1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was each decontamination event recorded in the logbook?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-1-16

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-085

Starting Date: 6-3-16

Date: 6-3-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	✓			
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	✓			
3. Was the log scale 1 inch = 1 foot?	✓			
4. Were logs completed in the field (originals)?	✓			
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	✓			
* Depositional type (alluvium, till, loess, etc.)	✓			
* Depths/Heights recorded in tenths of feet?	✓			
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	✓			
Soils classified as per USCS and fully described with numerical percents of constituents?	✓			
* Soil moisture content and texture or cohesiveness?	✓			
* Soil color described using the Munsell System?	✓			
6. Was general information (top of form MRK-55) completed?	✓			
7. Was the log signed by person preparing the log?	✓			
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	✓			
9. Were start and completion dates and time included for boring and well installation activities?	✓			
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	✓			
11. Were depths at which free water was encountered and stabilized water levels recorded?	✓			
12. Were soil sample depths recorded?	✓			
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	✓			
14. Were soil sampling methods and recovery recorded?	✓			

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-085

Starting Date: 6-3-16

Date: 6-3-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-3-16

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-085

Starting Date: 6-2-16

Date: 6-2-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Borehole Logging

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-095

Starting Date: 6-2-14

Date: 6-2-14

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

23. Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-2-14

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-105

Starting Date: 5-24-16

Date: 5-24-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Borehole Logging**

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-105

Starting Date: 5-24-16

Date: 5-24-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, or, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-24-16

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-115

Starting Date: 5-25-16

Date: 5-25-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Borehole Logging**

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures; e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-115

Starting Date: 5-25-16

Date: 5-25-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, or, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-25-16

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-125

Starting Date: 5-26-16

Date: 5-26-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Borehole Logging**

1. Was boring logged by a geologist or geological engineer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the log scale 1 inch = 1 foot?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were logs completed in the field (originals)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depositional type (alluvium, till, loess, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Depths/Heights recorded in tenths of feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soils classified as per USCS and fully described with numerical percents of constituents?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil moisture content and texture or cohesiveness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Soil color described using the Munsell System?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was general information (top of form MRK-55) completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the log signed by person preparing the log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were start and completion dates and time included for boring and well installation activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were depths at which free water was encountered and stabilized water levels recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were soil sample depths recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Were soil sampling methods and recovery recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-125

Starting Date: 5-26-16

Date: 5-26-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 5-26-16

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-135

Starting Date: 6-1-16

Date: 6-1-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**Borehole Logging**

1. Was boring logged by a geologist or geological engineer?	/			
2. Was log completed and entries printed legibly on USACE Form MRK-55 or MRK-55-2?	/			
3. Was the log scale 1 inch = 1 foot?	/			
4. Were logs completed in the field (originals)?	/			
5. Does log contain the following a routine entries?				
* Unique well number (as per Work Plan)?	/			
* Depositional type (alluvium, till, loess, etc.)	/			
* Depths/Heights recorded in tenths of feet?	/			
* Other descriptive features (bedding, organic material, soil structures;e.g., root-holes)	/			
Soils classified as per USCS and fully described with numerical percents of constituents?	/			
* Soil moisture content and texture or cohesiveness?	/			
* Soil color described using the Munsell System?	/			
6. Was general information (top of form MRK-55) completed?	/			
7. Was the log signed by person preparing the log?	/			
8. Were special conditions (i.e., intervals of hole instability) and their resolution recorded?	/			
9. Were start and completion dates and time included for boring and well installation activities?	/			
10. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings)?	/			
11. Were depths at which free water was encountered and stabilized water levels recorded?	/			
12. Were soil sample depths recorded?	/			
13. Were changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	/			
14. Were soil sampling methods and recovery recorded?	/			

BOREHOLE AND CORE LOGGING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Boring/Monitoring Well Number: MW-135

Starting Date: 6-1-16

Date: 6-1-16

Complete for each boring log. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
15. Were instrument (e.g., LEL, OVM) and detector tube measurements recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Were abbreviations used on log defined?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Were drilling fluids described (water source, additive brand, product name, and mixture, and type and brand of compressed air filter)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were drilling pressures and driller's comments recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Was total depth recorded and marked with a double line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was monitoring well diagram completed and attached to log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Core Logging

In addition to the items above, the following also apply to core-logging:

Was rock described using standard geologic nomenclature; e.g., rock type, relative hardness, density, texture, or, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Was start and stop time of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were depths to top and bottom of each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Was length of core recovered in each core run recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Were the size and type of coring bit and barrel recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Was the depth to the bottom of the hole measured after the core was removed for each core run?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-1-16

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-085

Starting Date: 6-3-16

Completion Date: 6-3-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Monitoring Well Number: MW-085

Starting Date: 6-3-16

Completion Date: 6-3-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-3-16

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-095

Starting Date: 6-2-16

Completion Date: 6-2-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-095

Starting Date: 6-2-16

Completion Date: 6-2-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-2-16

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-105

Starting Date: 5-24-16

Completion Date: 5-24-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-105

Starting Date: 5-24-16

Completion Date: 5-24-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-24-16

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-115

Starting Date: 5-25-16

Completion Date: 5-25-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: 5-5

Monitoring Well Number: MW-115

Starting Date: 5-25-16

Completion Date: 5-25-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-25-16

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-125

Starting Date: 5-26-16

Completion Date: 5-26-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5Monitoring Well Number: MW-125Starting Date: 5-26-14Completion Date: 5-26-14

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

5-26-14

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-135

Starting Date: 6-1-16

Completion Date: 6-1-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective

Actions form.

Yes No N/O N/A**General**

1. Was a geologist or geotechnical engineer present during installation of the monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were all depths verified during installation by measurement with a weighted tape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selection and Placement of Screen

3. Was the screen length specified in the Work Plan used in construction of the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was the approved screen slot size and filter pack used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the screen placed at the depth specified in the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did the rig geologist document the stable water level before installing the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the boring bailed dry during drilling to check for recharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction Materials and Techniques

8. Was the well constructed using flush threaded screen and riser conforming to ASTM D1785?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were the well materials transported to the Site in the manufacturers original plastic sleeves and shipping containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was the shipping container labeled to identify the materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the location of the markings, the brand and the supplier of the well materials recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did the filter pack material conform to the specifications of the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was the location of the markings, the brand and the supplier of the filter pack recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was the filter pack tremied into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was the elevation of the filter pack accurately monitored during installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Was the filter pack installed to 2-5 feet above the screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was the bentonite seal a minimum of 2 feet thick?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Were the brand, supplier, size and location of markings of the bentonite recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was the bentonite seal allowed to hydrate for a minimum of 4 hours before grouting when using bentonite pellets and as per manufacturers specifications when using high solids bentonite slurries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Was the remainder of the annular space tremie grouted with a 2% to 5% bentonite/cement grout?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WELL CONSTRUCTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-135

Starting Date: 6-1-16

Completion Date: 6-1-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

	Yes	No	N/O	N/A
21. Was the grout allowed to set a minimum of 48 hours before any additional work was resumed on the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was Monitoring Well Construction Diagram completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was Materials Summary Form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Monitoring Well Construction Diagrams

24. Was the construction diagram prepared by the geologist or geotechnical engineer present during the well installation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Does the construction diagram accurately depict each and every component and their respective vertical positions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Does the construction diagram list the types and quantities of materials used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-1-16

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-085

Starting Date: 6-5-16

Completion Date: 6-5-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-5-16

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-095

Starting Date: 6-4-16

Completion Date: 6-4-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-4-16

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-105

Starting Date: 5-26-14

Completion Date: 6-5-14

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 6-5-14

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-115

Starting Date: 6-14-16

Completion Date: 6-5-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A**General**

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-5-16

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-125

Starting Date: 6-1-16

Completion Date: 6-5-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective

Actions form.

Yes No N/O N/A**General**

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date:

6-5-16

WELL DEVELOPMENT CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: S-5

Monitoring Well Number: MW-135

Starting Date: 6-4-16

Completion Date: 6-5-16

Complete for each monitoring well. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

General

1. Was the grout allowed to set at least 48 hours after placement before starting development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were methods of development in accordance with the Work Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was final development water free of sand and drilling fluids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was development sufficiently complete to allow collection of ground water samples at 50 NTUs or less?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was a minimum of 3 times the volume of liquid lost during drilling and filter pack placement removed during development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was well development information accurately recorded on the well development form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were color photographs taken of the water after completion of development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

6-5-16

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: MW-125 / SD-11

Sampling Date: 5/26/16

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A**General**

1. Were new protective gloves worn between sampling locations and/or intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were samples collected using methods described in the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were sample containers filled in the correct order?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was sampling equipment appropriate for the purpose and site conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were procedures for collecting QA/QC samples followed as per the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were sampling locations properly identified by land survey?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were bottles adequately protected from contamination prior to sample collection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ground / Surface Water for Chemical Analysis

9. Were ground water parameters stable before sample collection (as per FSP)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were turbidity readings below 50 NTU (or if all other field parameters are stable and turbidity can not be lowered below 50 NTU, were turbidity readings within + or - 10% over three, five-minute readings)? Note: approval must be obtained from the project geologist and project manager prior to sampling in turbid conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was low-flow sampling conducted in accordance with the approved SAP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sediment for Chemical Analysis

14. Were sample collected according to the FSP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Soil for Chemical Analysis

18. Were sample collected according to the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was a field sampling form completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21. Was headspace in sample containers for volatiles eliminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number:

Sampling Date:

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

SB-11	SB-11-0-1	SB-11-5-6	SB-11-14-15	EDW-WW
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Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

5/26/14

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number: MW-135 / SB-12

Sampling Date: 4-1-16

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A**General**

1. Were new protective gloves worn between sampling locations and/or intervals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were samples collected using methods described in the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were sample containers filled in the correct order?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was sampling equipment appropriate for the purpose and site conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were procedures for collecting QA/QC samples followed as per the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were sampling locations properly identified by land survey?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were bottles adequately protected from contamination prior to sample collection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ground / Surface Water for Chemical Analysis

9. Were ground water parameters stable before sample collection (as per FSP)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were turbidity readings below 50 NTU (or if all other field parameters are stable and turbidity can not be lowered below 50 NTU, were turbidity readings within + or - 10% over three, five-minute readings)? Note: approval must be obtained from the project geologist and project manager prior to sampling in turbid conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Was low-flow sampling conducted in accordance with the approved SAP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sediment for Chemical Analysis

14. Were sample collected according to the FSP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Was headspace in sample containers for volatiles eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Soil for Chemical Analysis

18. Were sample collected according to the FSP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Was a field sampling form completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20. Were the analytical parameters and QA/QC samples recorded on the field sampling form?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21. Was headspace in sample containers for volatiles eliminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE COLLECTION CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Monitoring Well Number:

Sampling Date:

Complete for each monitoring well sampling location inspected. Answer each question by checking the appropriate column (yes, no, not observed (N/O) or N/A). If "no" is checked, provide an explanation on the form.

Yes No N/O N/A

SB-12-0-1, SB-12-3-4, SB-12-6-7

Corrective Actions:

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date: 4-1-16

SURVEYING CHECKLIST

Project Name/Location: Former Forbes Atlas Missile Site S-5

Site: *Forbes S-5*

Date: *6-29-16*

Complete one time for project. Answer each question by checking the appropriate column (yes, no, or N/A).

If a No is checked, provide an explanation on the Noncompliance and Corrective Actions form.

Yes No N/O N/A

Surveying

1. Was the Scope of Work reviewed with the surveyor?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was the schedule for the work provided to the surveyor?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the survey completed by a licensed land surveyor?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were locations surveyed for horizontal and vertical control?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were coordinates measured to the closest 0.1 feet and elevations measured to the closest 0.01 feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was the survey marker and TOC surveyed for each monitoring well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were surveyor's closure calculations reviewed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was surveyor interviewed by QC Inspector before leaving the Site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The QC Inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: *6-29-16*