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Sampling Work Plan for Mortandad/Sandia Q2 MY2013

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Approval Signatures:

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REVISION HISTORY

Document No./ Revision No.	Issue Date	Action	Description
EP-DIV-DI-20126, R.0	01/31/2013	Desk instruction for Mortandad/Sandia Q2 MY2013	Sampling Work Plan for Mortandad/Sandia Q2 MY2013 Clarified information on R-61 time-series and quick-turnaround samples.

Sampling Work Plan for
Mortandad/Sandia Q2 MY2013

General Guidance

All sampling should be conducted per the Groundwater Sampling SOP, with the exceptions listed below.

1) Field indicator parameter stability for all sampling locations should be defined using the following field indicator parameter stability requirements:

Field Parameter	Field Indicator Parameter Stability Criteria (for at least 3 consecutive measurements)	References
Turbidity	<10 NTUs, or If turbidity ≥ 10 NTUs, turbidity should vary no more than 10%.	Yeskis and Zavala, 2002; Puls and Barcelona, 1996; Wilde et al., 1998
DO	DO varies no more than 0.2 mg/L	Nielsen and Nielsen, 2005; USGS Field Manual, 2008
pH	pH varies no more than 0.2 SU	Yeskis and Zavala, 2002; Puls and Barcelona, 1996; Wilde et al., 1998; USGS Field Manual, 2008
SC	For SC>100 µS/cm, SC varies no more than 3%, or for SC≤100 µS/cm, SC varies no more than 5%	Yeskis and Zavala, 2002; Puls and Barcelona, 1996; USGS Field Manual, 2008

To calculate stability, subtract the lowest of the final three readings from the highest of the final three readings. This number should be less than or equal to the given allowable range (i.e., 0.2 SU for pH).To calculate stability when the stability criteria is defined by a percentage, calculate the allowable range using the median value of the final three readings.

2) For wells that are highly effervescent (particularly R-34, R-50 S1 and S2, R-60 and R-62) manually measure specific conductance and turbidity outside of the flow-through cell to minimize the effects of effervescence. Mitigate effervescence using sample degassing kit to remove the effervescence by applying a vacuum. For both specific conductance and turbidity, record non-flow-through cell values on the groundwater sampling log and use these values when calculating stability.

Well-Specific Guidance

R-28: Green tint noted during last sampling event. Sample per SOP.

R-34: This well has shown effervescence in past sampling events. Note any effervescence. Manually measure specific conductance outside of flow-through cell for more accurate readings that are not affected by effervescence.

R-42: Green tint noted during last sampling event. Sample per SOP.

R-50 S1 and S2: Well has shown effervescence in the past. Measure specific conductance and turbidity outside of the flow-through cell if water is effervescent. APV tends to stick, with the potential for sampling the wrong screen if the APV is not fully actuated. Monitor water levels in both screens to make sure the water level in the proper screen is responding. Both screens of R-50 have had problems with effervescence in the past; note any observed effervescence. Measure specific conductance outside of flow-through cell using an alternate meter to minimize interference from effervescence. Utilize flow-through cell for all other parameters. Purge R-50 S2 at a rate of approximately 1.5 GPM to prevent pump problems.

R-60: Well has shown effervescence in the past. Measure specific conductance and turbidity outside of the flow-through cell if water is effervescent. Purge at a rate of around 1.1 GPM to prevent drawdown into the screen. Pump purges at a rate of 1.6 GPM, unrestricted.

R-61 S1 - Conduct 12 CV extended purge with time series for analysis at GEL. Collect IFGMP sample for offsite analysis in accordance with the groundwater sampling SOP, and request quick turnaround (10-day) analysis for metals and perchlorate. Collect time-series samples for general inorganics and metals at 3 CVs, 6 CVs, 9 CVs, and 12 CVs for analysis at GEL. The time-series samples should be coded with a "sample type" of W. A 10-day quick turnaround time should be requested for all general inorganics and metals time-series samples.

R-61 S2 – Conduct 12 CV extended purge with time series for analysis at GEL. Collect IFGMP sample for offsite analysis in accordance with the groundwater sampling SOP, and request quick turnaround (10-day) analysis for metals and perchlorate. Collect time-series samples for general inorganics and metals at 3 CVs, 6 CVs, 9 CVs, and 12 CVs for analysis at GEL. The time-series samples should be coded with a "sample type" of W. A 10-day quick turnaround time should be requested for all general inorganics and metals time-series samples.

R-62: Well has shown effervescence in the past. Measure specific conductance and turbidity outside of the flow-through cell if water is effervescent. Pump at 2 to 2.5 gpm or the maximum possible flow rate that maintains the water level above the top of the screen.

SCI-1: Sample after 1 CV plus DP have been purged and parameters have stabilized. If the well purges dry before 1CV plus DP have been purged, allow for recharge and sample on the same day in the order of the prioritized suite.