

FINAL WORK PLAN

Contract No. W9126G-07-D-0028

Task Order No. DO11



Prepared for:

Camp Stanley Storage Activity

Boerne, Texas

Prepared by:

PARSONS

Austin, TX

June 2009

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1.0 INTRODUCTION

Parsons is under contract with the U.S. Army Corps of Engineers (USACE) Fort Worth District (CESWF) to provide groundwater monitoring under Contract W9126G-07-D-0028, Task Order DO11. Services will be provided for Camp Stanley Storage Activity (CSSA) at the facility located in Boerne, Texas. The work shall be performed in accordance with requirements of the Resource Conservation and Recovery Act (RCRA) 3008(h) Order in effect for CSSA.

This work plan provides a description of the activities to be conducted to complete the requirements of the scope of work in effect for DO11. Existing work plans for current and previous CSSA task orders fulfilled by Parsons are in effect and are available in the CSSA Environmental Encyclopedia, Volume 1, Work Plans. Activities to be conducted for DO11 will follow the provisions of those prior work plans, as applicable. This work plan sets out project-specific activities directly related to groundwater monitoring to be conducted under DO11.

2.0 GROUNDWATER MONITORING SCOPE OF WORK

The activities covered by this work plan include monitoring existing on- and off-post groundwater wells, sampling Westbay-equipped wells, providing data validation, and providing on- and off-post granular activated carbon (GAC) maintenance.

2.1 GROUNDWATER SAMPLING

Groundwater monitoring will be conducted in the months of March 2009, June 2009, September 2009, and December 2009. Twelve months of on- and off-post GAC maintenance will be conducted (through December 2009). **Table 2-1** indicates the number of wells and sampling parameters to be completed under this TO. Wells may be removed from or included in the sampling schedule based on the recommendations of the Final Long-Term Monitoring Optimization (LTMO) Study (Parsons, 2005) and/or the provisions of the Data Quality Objectives (DQOs) for the Groundwater Monitoring Program (Parsons, 2006). It was determined that a snapshot, with all wells being sampled in one event, is needed to better define plume migration from year to year. The snapshot is scheduled for March 2009, Table 2-1, this can be adjusted depending on rainfall and groundwater elevations at the time of sampling. Wells to be sampled are shown on **Attachments 1** through **3**.

Prior to sampling, each well will be purged in accordance with low-flow sampling techniques. Parsons will follow the methods approved in CSSA Quality Assurance Program Plan (QAPP) and the Sampling and Analysis Plan (SAP) for DO11. Quality Assurance/Quality Control (QA/QC) sampling and analysis will be performed to meet the requirements in the CSSA QAPP. The purge water will be containerized and transported for treatment in the GAC treatment system prior to discharge at CSSA's Outfall 002. Further details on the groundwater sampling are included in the sampling and analysis plan for DO11.

GAC maintenance includes inspection and replacement of the pre-filters installed at each GAC system every three weeks. The GAC system is also inspected for condition and operation.

The carbon canisters at the off-post GAC systems located at (LS-6, LS-7, OFR-3, RFR-10 and RFR-11) are scheduled for replacement every six months, or as needed based on analytical results. Carbon exchange is scheduled for November 2009 and May 2009. During the May 2009 carbon exchange the GAC structures will be replaced at wells LS-6, LS-7, OFR-3, and RFR-10. The well house at RFR-11 will also be upgraded during this carbon exchange.

2.2 ANALYTICAL VALIDATION AND VERIFICATION

The analytical validation and verification task includes issues related to analytical data, including oversight of sample collection and submittal efforts, interaction with the selected laboratory, data verification, data validation, and management of electronic analytical data. Groundwater results from the on- and off-post monitoring and drinking water wells are validated in accordance with the CSSA QAPP. Westbay and outfall or GAC effluent sampling 002 and 004 should meet the requirements of the Camp Stanley QAPP and Groundwater Monitoring DQOs as screening level data.

**Table 2-1
 Sample Quantities and Analytical Parameters**

		Analyses & Method					
		VOCs	Metals	Trip Blank	MS	MSD	Field Duplicates
Well Type/Total No. Wells		8260	6010	8260	8260	8260	8260
March 2009							
Total Wells	86	8260	6010	8260	8260	8260	8260
CSSA Wells		46	46	5	2	2	5
Off-Post Supply Wells*		40	--	3	2	2	4
June 2009							
Total Wells	55	8260	6010	8260	8260	8260	8260
CSSA Wells		15	15	2	1	1	2
Off-Post Supply Wells		40	--	3	2	2	4
September 2009							
Total Wells	76	8260	6010	8260	8260	8260	8260
CSSA Wells		36	36	4	2	2	4
Off-Post Supply Wells*		40	--	3	2	2	4
December 2009							
Total Wells	47	8260	6010	8260	8260	8260	8260
CSSA Wells		7	7	1	1	1	1
Off-Post Supply Wells		40	--	3	2	2	4

*Off-post supply wells include post GAC sampling for wells with treatment systems every six months.

Parsons will oversee each sampling event, including reviewing each chain-of-custody for accuracy and completeness, verifying that the laboratory sample log-in sheets match the chain-of-custody forms, addressing any sample receipt issues (such as broken sample containers), and maintaining continuous contact with the laboratory regarding scheduling.

Laboratory data packages will be reviewed by Parsons chemists for completeness and adherence to the CSSA QAPP and the approved laboratory variances. All associated analytical QA/QC data will be examined, and all exceptions will be noted in both the case narrative and data verification report (DVR). The sample results associated with noncompliant QC performance will be qualified in accordance with the CSSA QAPP.

Following verification of the laboratory data, the data usability as related to the project DQOs will be assessed. Validation will include examination of historical data (if available), laboratory data trends, and the reasons for data collection. Based on the overall assessment of the data, flags may be removed or changed to reflect usability of the data. The basis for such changes will be detailed in the project summary report.

Electronic data submitted by the laboratories will be loaded into the CSSA GIS database, verified for accuracy, and updated to reflect all data qualifier changes incurred through the data verification and validation process. The data are to be supplied in Environmental Resource Program Information Management System (ERPIMS) compliant format.

2.3 REPORTING PROCEDURES

Various reports are required under the DO11 scope of work, including: Quarterly Groundwater Monitoring Reports, Annual Groundwater Monitoring Report, Health and Safety Plan, Sampling and Analysis Plan, Project Activities Work Plan, Annual Groundwater Fact Sheet, Status Reports, and Meeting Minutes. Specific reporting procedures will follow the provisions of the statement of work (SOW) and the procedures set out below.

2.3.1 Groundwater Reports

All results from the four rounds of groundwater sampling will be included in the quarterly groundwater reports and one annual groundwater report, summarizing all of 2009. The preliminary analytical data will be provided to CSSA within five days of receipt at Parsons. All reports will be prepared as both draft and final versions, with one round of government comments before issuance of the final reports. Three summary quarterly groundwater reports will be prepared and submitted to document the findings of contaminant concentration and delineation. One annual groundwater report (December 2009) will be prepared to summarize the quarterly reports for all sampling in 2009.

The samples collected from Outfalls 002 and 004 are reported in monthly discharge monitoring reports, to be submitted to TCEQ. The discharge monitoring reports will be provided each month to CSSA for submittal to TCEQ.

2.3.2 Report Distribution

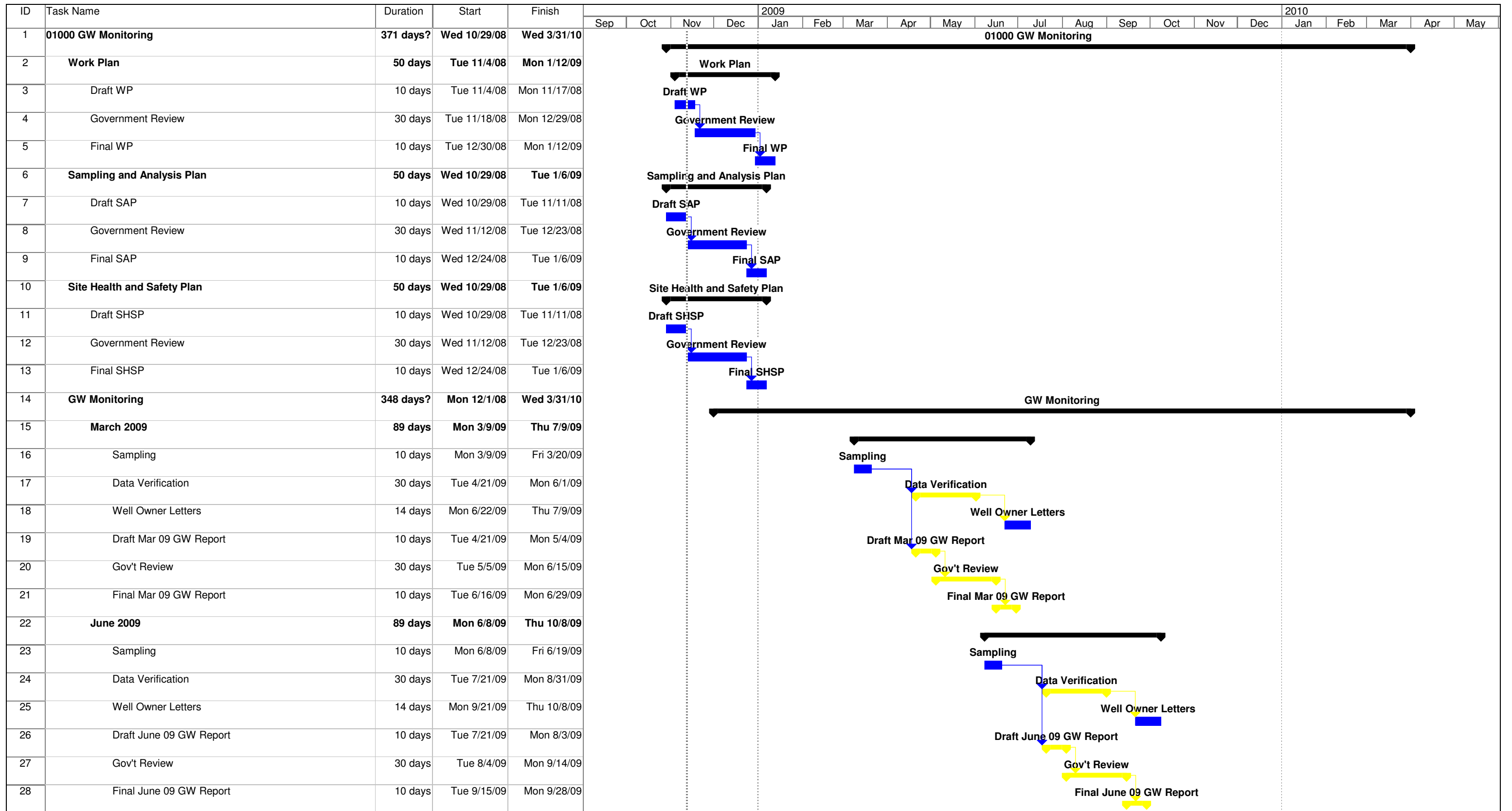
From the field efforts for groundwater monitoring covered in this work plan, three reports will be submitted in draft and final versions. In addition, all technical reports produced as part of DO11 will be submitted in accordance with the SOW provisions. The project deliverables will be prepared and submitted to the entities defined in the SOW, USACE and CSSA.

3.0 SCHEDULE

The activities covered by this work plan will be performed in accordance with the schedule given in Table 3-1.

Table 3-1 provides a tentative timeline for the progression of work. With the current scope of work, quarterly groundwater reporting will be completed by March 2010. The schedule will be maintained and updated, and submitted with the bi-monthly status reports.

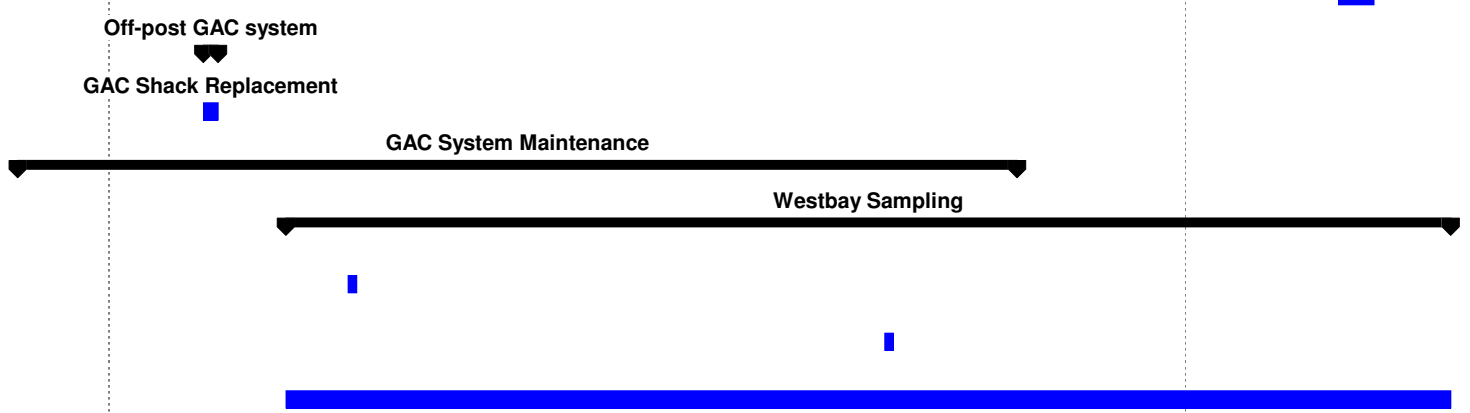
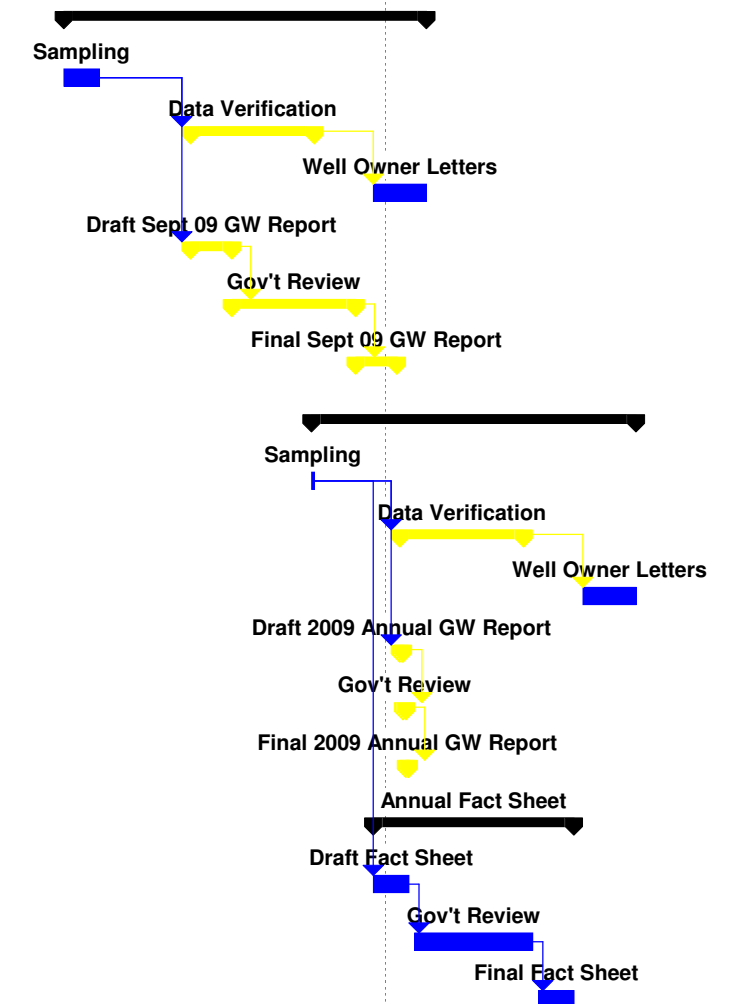
Table 3-1
Schedule



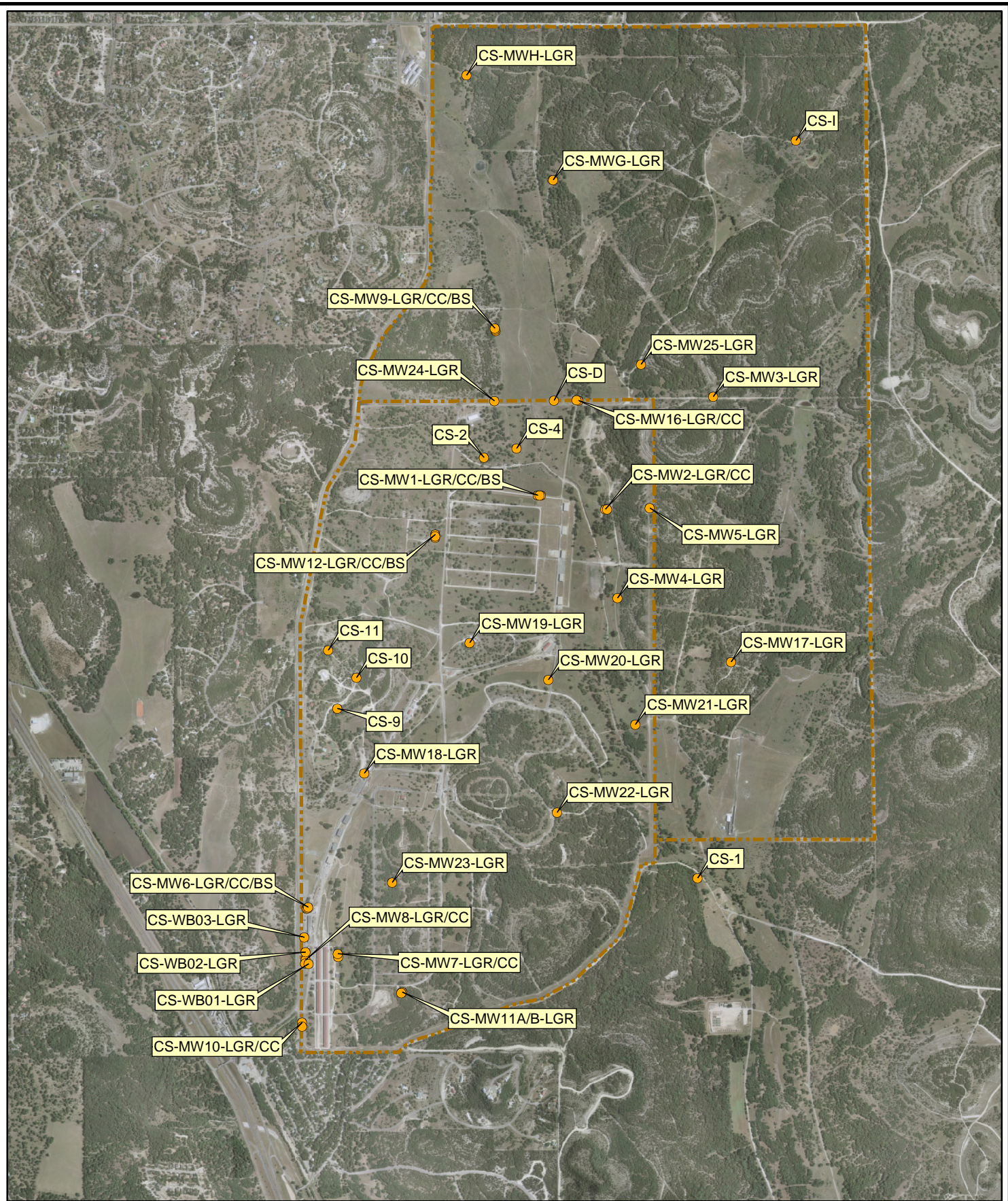
Project: CSSA Schedule
Date: Wed 11/12/08

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

ID	Task Name	Duration	Start	Finish	2009												2010					
					Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
29	September 2009	89 days	Mon 9/14/09	Thu 1/14/10																		
30	Sampling	10 days	Mon 9/14/09	Fri 9/25/09																		
31	Data Verification	30 days	Tue 10/27/09	Mon 12/7/09																		
32	Well Owner Letters	14 days	Mon 12/28/09	Thu 1/14/10																		
33	Draft Sept 09 GW Report	10 days	Tue 10/27/09	Mon 11/9/09																		
34	Gov't Review	30 days	Tue 11/10/09	Mon 12/21/09																		
35	Final Sept 09 GW Report	10 days	Tue 12/22/09	Mon 1/4/10																		
36	December 2009	80 days?	Mon 12/7/09	Fri 3/26/10																		
37	Sampling	1 day?	Mon 12/7/09	Mon 12/7/09																		
38	Data Verification	30 days	Wed 1/6/10	Tue 2/16/10																		
39	Well Owner Letters	14 days	Tue 3/9/10	Fri 3/26/10																		
40	Draft 2009 Annual GW Report	1 day?	Wed 1/6/10	Wed 1/6/10																		
41	Gov't Review	1 day?	Thu 1/7/10	Thu 1/7/10																		
42	Final 2009 Annual GW Report	1 day?	Fri 1/8/10	Fri 1/8/10																		
43	Annual Fact Sheet	50 days	Mon 12/28/09	Fri 3/5/10																		
44	Draft Fact Sheet	10 days	Mon 12/28/09	Fri 1/8/10																		
45	Gov't Review	30 days	Mon 1/11/10	Fri 2/19/10																		
46	Final Fact Sheet	10 days	Mon 2/22/10	Fri 3/5/10																		
47	Off-post GAC system	5 days	Mon 2/2/09	Fri 2/6/09																		
48	GAC Shack Replacement	5 days	Mon 2/2/09	Fri 2/6/09																		
49	GAC System Maintenance	243 days	Mon 12/1/08	Wed 11/4/09																		
62	Westbay Sampling	283 days	Mon 3/2/09	Wed 3/31/10																		
63	March 2009	3 days	Mon 3/23/09	Wed 3/25/09																		
64	September 2009	3 days	Mon 9/21/09	Wed 9/23/09																		
65	GAC Effluent Sampling	283 days	Mon 3/2/09	Wed 3/31/10																		



Attachments 1 through 3
On-post and Off-post Groundwater Wells, CSSA



- On-Post Wells and Off-Post Wells
- CSSA Boundary

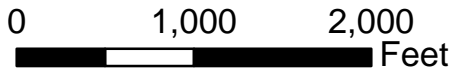
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Attachment 1
On-Post Ground Water Wells Camp Stanley Storage Activity
Parsons



● On-Post Wells and Off-Post Wells

--- CSSA Boundary



Attachment 2

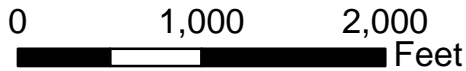
Western Off-Post Ground Water Wells
Camp Stanley Storage Activity

Parsons



● On-Post Wells and Off-Post Wells

--- CSSA Boundary



Attachment 3

South Western Off-Post Ground Water Wells
Camp Stanley Storage Activity

Parsons