

PROGRESS REPORT

July 1, 2015 – December 31, 2015

(47th REPORT)



Camp Stanley Storage Activity

Boerne, Texas

USEPA ID No. TX2210020739

January 2016

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS.....	1
INTRODUCTION.....	2
Summary of Activities this Period.....	2
Report Organization.....	2
RCRA FACILITY INVESTIGATION.....	5
CORRECTIVE MEASURES STUDY.....	5
CORRECTIVE MEASURES IMPLEMENTATION.....	6
SWMU B-3 Bioreactor	6
AOC-65 In-Situ Chemical Oxidation	7
Groundwater Monitoring	8
June 2015 Sampling.....	8
September 2015 Sampling	8
December 2015 Sampling.....	9
Off-Post GAC Systems	9
Data Validation and Verification	10
Meetings.....	10
Environmental Encyclopedia Updates.....	11
Summary of Contacts.....	12
PROJECTED WORK FOR THE NEXT PERIOD.....	12
Groundwater Monitoring	12
SWMU B-3 Bioreactor	12
AOC-65 ISCO.....	12
Meetings.....	12

LIST OF TABLES

Table 1	§3008(h) Administrative Order on Consent Project Phases	4
Table 2	Environmental Project Task Completion to Date (Values updated through November 30, 2015)	13
Table 3	Project Team Contact Information.....	16

ATTACHMENTS

Attachment 1	On-Post and Off-Post Sampled Wells Figure
Attachment 2	Summary of Status of Each SWMU/AOC/RMU Site
Attachment 3	Overall Order Percent Complete
Attachment 4	Groundwater Results Summary

ACRONYMS AND ABBREVIATIONS

1,1-DCE	1,1-dichloroethene
AOC	Area of Concern
APPL	Agriculture & Priority Pollutants Laboratories, Inc.
BTOC	Below top of casing
<i>cis</i> -1,2-DCE	<i>cis</i> -1,2-dichloroethene
CSSA	Camp Stanley Storage Activity
DO	Dissolved oxygen
DQO	data quality objective
GAC	granular activated carbon
IRA	Interim removal action
I/SM	interim/stabilization measures
ISCO	in-situ chemical oxidation
LGR	Lower Glen Rose
LTMO	long-term monitoring optimization
MCL	maximum contaminant level
MPMW	multi-port monitoring well
NFA	No Further Action
NH	nonhazardous
O&M	operations and maintenance
Order	§3008(h) Administrative Order on Consent
Pb	lead
PBR	permit-by-rule
PCE	tetrachloroethene
PCL	protective concentration level
QAPP	Quality Assurance Program Plan
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RIR	Release Investigation Report
RL	reporting limit
RMU	Range Management Unit
SCADA	supervisory control and data acquisition
SIW	steam injection well
SVOC	semi-volatile organic compound
SWMU	Solid Waste Management Unit
TAC	Texas Administrative Code
TCE	trichloroethene
TCEQ	Texas Commission on Environmental Quality
<i>trans</i> -1,2-DCE	<i>trans</i> -1,2-dichloroethene
TSW	Treatability study well
UGR	Upper Glen Rose
UIC	underground injection control
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VC	vinyl chloride
VEW	vapor extraction well
VOC	volatile organic compound

PROGRESS REPORT JULY 1, 2015 – DECEMBER 31, 2015 (47TH PERIOD)

INTRODUCTION

This 47th Progress Report for Camp Stanley Storage Activity (CSSA), Boerne, Texas, U.S. Environmental Protection Agency (USEPA) Identification Number TX2210020739, is submitted in accordance with the Administrative Order on Consent (Order) issued to CSSA on May 5, 1999, pursuant to §3008(h) of the Safe Drinking Water Act, as amended by the Resource Conservation and Recovery Act (RCRA), and further amended by the Hazardous and Solid Waste Act of 1984, 42 United States Code §6928(h). This report addresses the project progress from July 1 through December 31, 2015. In June 2006, CSSA switched from quarterly to semi-annual progress reporting, as approved by USEPA. Subsequent progress reports will continue to be submitted on a semi-annual basis, until the Order is closed.

Summary of Activities this Period

Between July 1 and December 31, 2015, significant activities related to the Order included:

- USEPA issued the Final Decision and Response to Comments (Final Decision Document [DD]) selecting the Final Remedy for groundwater remediation at CSSA on July 28, 2015;
- Solid Waste Management Unit (SWMU) B-3 bioreactor corrective measures;
- AOC-65 in-situ chemical oxidation (ISCO) corrective measures;
- Continuation of the groundwater monitoring program under the regulator-approved data quality objectives (DQO);
- Evaluation of Long-Term Monitoring Optimization (LTMO) and Data Quality Objectives (DQOs);
- Continued maintenance of off-post granular activated carbon (GAC) systems; and
- Continuation of administrative record maintenance.

Report Organization

This report details work completed on tasks associated with the Order. The Order outlined work to be conducted under four phases: Interim Measures, RCRA Facility Investigation, Corrective Measures Study, and Corrective Measures Implementation. With completion of the DD in July 2015, work at CSSA is focused on corrective measures implementation.

Phase names and task names listed in **Table 1** are taken directly from the Order. Information for tasks active from July 1 through December 31, 2015 is provided in this report. No current information is provided for tasks that are not active; however, a summary of all tasks, subtasks, and their status has been presented in previous reports. Details of the evaluation of the percent complete by awarded projects are included in **Table 2**. An updated project team contact information chart with telephone numbers and addresses is included in **Table 3**. **Attachment 1** shows the locations of groundwater wells referenced in this report. A summary of the status of all identified SWMUs, AOCs, and RMUs at CSSA is provided in **Attachment 2**. **Attachment 3**

is a summary of the physical percent complete of each order related task being conducted at CSSA. **Attachment 4** is a summary of groundwater results for sampling events conducted this period.

Table 1 §3008(h) Administrative Order on Consent Project Phases

3008(h) Order Phase and Subtasks	Phase Purpose	Phase's % of Overall Order	Subtask's % of Phase	Physical % Complete of Subtask	Subtask portion of Phase % Complete	Physical % Complete of Phase	Active During P47
Interim Measures		30%				100%	
Interim Measures Work Plan	Mitigate a current or potential threat to human health and/or the environment.		7%	100%	7%		No
Interim Measures Implementation			70%	100%	70%		No
Reports			23%	100%	23%		No
RCRA Facility Investigation		30%				100%	
Preliminary Report	Characterize the environmental setting of CSSA; define the sources of contamination; define the degree and extent of contamination; identify actual or potential receptors; and assess whether any additional interim/stabilization measures may be warranted.		5%	100%	5%		No
RFI Work Plan			5%	100%	5%		No
Facility Investigation			40%	100%	40%		No
Risk Assessment			10%	100%	10%		No
Investigation Analysis			10%	100%	10%		No
Groundwater Investigation			15%	99%	15%		No
Treatability Studies			10%	95%	10%		No
Progress Reports			5%	99%	5%		No
Corrective Measures Study		10%				100%	
Identify and Develop Alternatives	Identification, screening, and development of alternatives for removal, containment, treatment, and/or other remediation of the contamination.		15%	100%	15%		No
Evaluate Alternatives			60%	100%	60%		No
Reports			25%	100%	25%		No
Corrective Measures Implementation		30%				55%	
Implementation Program Plan	Design, construct, operate, maintain, and monitor the performance of corrective measure(s) selected to protect human health and the environment.		5%	99%	5%		Yes
Corrective Measure Design			15%	99%	15%		Yes
Corrective Measure Construction			70%	50%	35%		Yes
Corrective Measures Report			10%	0%	0%		No
% of All Phases Complete						86%	

RCRA FACILITY INVESTIGATION

The RCRA Facility Investigation (RFI) was conducted to characterize the environmental setting of CSSA, define the sources of contamination, define the degree and extent of contamination, identify actual or potential receptors, and assess whether any additional interim/stabilization measures (I/SM) may be warranted. The Baseline Risk Assessment Report for CSSA was approved by USEPA on April 21, 2014. The RFI Report was approved by USEPA on December 4, 2014.

A total of 84 SWMUs, AOCs, and RMUs have been identified at CSSA, and investigations have been conducted at most of those sites. A summary of the status of each site, including whether the site is recommended for closure or if closure is approved, is provided in Attachment 2. To date, closure of 77 CSSA sites has been approved by TCEQ, and four sites (SWMUs B-2, B-8, B-20/21, and B-24) were combined into RMU-1, CSSA's active firing range. The three open sites include SWMU B-3, AOC-65, and RMU-1, as summarized below.

Remaining Sites at CSSA

Site Name	Status
<ul style="list-style-type: none"> ○ SWMU B-3 ○ AOC-65 	Ongoing remediation for groundwater.
<ul style="list-style-type: none"> ○ SWMU B-2 ○ SWMU B-8 ○ SWMU B-20/21 ○ SWMU B-24 	} RMU-1 Sites located in current active range fan. Closure to be deferred to when range (RMU-1) closes, per USEPA Memo re: CSSA North Pasture Fencing (February 29, 2012).

CORRECTIVE MEASURES STUDY

Investigation results were used to develop and evaluate alternatives during the CMS. The CMS consisted of the identification, screening, and development of alternatives for removal, containment, treatment, and/or other remediation of the contamination identified at CSSA. The CMS is based on results of the RFI, identified corrective measure technologies, and results of any treatability studies. The CMS Report, approved by USEPA on January 22, 2015, recommended the following corrective measures:

- Implement institutional and engineering land use controls to prevent contact with contaminated media;
- Current off-post GAC units would continue to be operated and monitored, and new GAC units would be installed at additional off-post drinking water wells if necessary;
- Continued use of bioremediation (bioreactor) to treat the source area at SWMU B-3; and
- Continued use of ISCO to treat source area contamination at AOC-65.

A public meeting was held in January 2015. Following the public comment period, during which USEPA received no comments, USEPA prepared the DD.

CORRECTIVE MEASURES IMPLEMENTATION

SWMU B-3 Bioreactor

Approximately 138,400,000 gallons of groundwater extracted from CS-MW16-LGR, CS-MW16-CC, CS-B3-EXW01, CS-B3-EXW02, CS-B3-EXW03, CS-B3-EXW04 and CS-B3-EXW05 have been injected into the bioreactor trenches since the start of injection in 2007. An annual underground injection control (UIC) report was submitted to the TCEQ early in Period 47 (July 2015) in accordance with CSSA's Class V Aquifer Remediation Injection Well Permit, TCEQ Authorization No. 5X2600431; WWC12002216. UIC reports are submitted on an annual basis with the next report scheduled for submission early in Period 49. SWMU B-3 Bioreactor Performance Status Reports will be submitted to CSSA, TCEQ, and USEPA during the next period. The reporting frequency is on an annual basis and the next performance status report is scheduled for submission early in Period 49.

Groundwater samples were collected from sumps, monitoring wells, Westbay-equipped wells, and the injection discharge. Sampling frequency was based on permit requirements and water availability. In general, injected groundwater samples are collected quarterly and monitoring samples from Westbay-equipped monitoring wells, injection trench sumps, and additional performance samples are collected semi-annually. All samples were analyzed for permit parameters – VOCs, total dissolved solids, and other selected performance parameters. Analyses were performed by APPL, DHL Laboratory, Microbial Insights, and Microseeps Laboratory. Collected field data included injection volumes, injection pressures, and the pH of recovered groundwater for TCEQ permit compliance. Results are reported on an annual basis with the next report due for submission in Period 47. Analytical data collected for performance parameters include:

- Dissolved Organic Carbon;
- Methane, Ethane, and Ethene;
- Hydrogen;
- Temperature, pH, and specific conductivity;
- Oxidation Reduction Potential;
- Dissolved Oxygen;
- Total Organic Carbon;
- Carbon Dioxide;
- Hydrogen;
- Sulfide;
- Additional ions including Sulfate, Chloride, Ferrous Iron, and Manganese; and
- *Dehalococcoides* populations.

During Period 47, the bioreactor remained at saturated conditions due to the continued supply of water from wells CS-MW16-CC, CS-MW16-LGR, B3-EXW01, B3-EXW02, B3-EXW03, B3-EXW04 and B3-EXW05 as well as several heavy rainfall events during the period. Approximately 17,000,000 gallons of water were injected into bioreactor trenches 1 and 6 during Period 47.

Monitoring results continue to indicate that effective treatment of injected groundwater in the bioreactor is occurring; however, VOC components continue to remain in strata adjacent to and beneath the trenches. Breakdown products of highly chlorinated species, such as PCE and TCE, are identified in groundwater samples from locations surrounding the bioreactor.

AOC-65 In-Situ Chemical Oxidation

Preparations for the ISCO (sodium permanganate solution) injection at AOC-65 began in mid July with a pre-injection dye tracing test and the excavation and construction of five additional infiltration galleries. Three dyes (fluorescein, eosine, and Rhodamine WT) were injected into three existing wells within AOC-65 (one type of dye per well) to determine groundwater flow direction in the shallow subsurface. Wells selected for dye injection are shallowly screened, to better represent flow of injected permanganate from newly constructed infiltration galleries. Carbon packs, installed in a selection of wells within AOC-65, were allowed to remain in wells for one week before shipment to the lab to determine if the injected dyes had migrated from the injection wells. A round of baseline groundwater monitoring with carbon packs preceded four rounds (four weeks) of dye monitoring. Results of the dye monitoring were inconclusive; however, dye injected in VEW-32 was observed at VEW-18 indicating a southern component to groundwater flow in the shallow subsurface. The objective of the dye tracing test was to better understand groundwater flow, thus be better able to predict where sodium permanganate would likely migrate following injections.

Excavation and construction of five new infiltration galleries at AOC-65 occurred concurrently with the dye tracing test. A kick-off meeting for the Interim Removal effort, involving Parsons, Gruene Environmental, and CSSA, was held at CSSA on July 24, 2015. The meeting included discussions of design implementation for the infiltration galleries which began on July 27, 2015 and lasted three weeks. Three of the infiltration cells are located along the road west of Building 90 and two located within the concrete vault within Building 90 that formerly held a vat that contained chlorinated solvents. The exterior cells (northern infiltration cell [NIC], middle infiltration cell [MIC], and southern infiltration cell [SIC]) are 10-feet-wide by 20-feet-long and have depths of 5-, 10, and 15-feet from north to south. The two interior vault cells (east vault cell [EVC] and west vault cell [WVC]) are 2-feet-wide by 14-feet-long by 2-feet-deep. The locations chosen for these new infiltration cells are based on the suspected locations of sources of PCE contamination at AOC-65.

The first ISCO injection utilizing sodium permanganate during Period 47 was performed the week of August 24. This first injection included the application of 1,000 gallons of sodium permanganate solution in each of the exterior infiltration cells and 250 gallons in each of the interior cells. During this first application, the concentration of sodium permanganate was relatively low at 0.44 mg/L. The second round of ISCO injections was performed the week of November 2. The second round of injections included the application of 7,200 gallons of 0.88 mg/L permanganate solution distributed among the five infiltration cells, with priority given to the NIC (~3,760 gallons). Volumes of ISCO solution applied within other cells include: 1,260 gallons (MIC), 1,050 gallons (SIC), and 1,100 gallons split between the two vault cells (EVC and WVC). It was anticipated that ISCO solution injected into the NIC would ultimately flow south, overlapping treatment zones of the MIC and SIC based on results from earlier dye tracing tests.

Two rounds of sampling have been performed (Round 1 – 30 days post-injection 1; Round 2 – 30 days post-injection 2). The remaining rounds will be performed quarterly in February, May, and August of 2016.

Groundwater Monitoring

On- and off-post groundwater monitoring was conducted in accordance with regulator-approved DQOs during Period 47. Sampling frequencies for on-post and off-post wells are currently determined by the LTMO study updated in November 2010, as approved by TCEQ and USEPA. Updates to the LTMO and DQOs are currently underway and were presented to USEPA and TCEQ for discussion at a meeting at CSSA on November 3, 2015. The reports will be submitted to the regulators in Period 48. A map of the well locations is provided in Attachment 1 of this report.

The analyte list for each monitoring event was in accordance with the applicable work plans and DQOs. On- and off-post monitoring wells and Westbay-equipped wells were sampled for the SW-846 Method 8260B VOCs 1,1-dichloroethene (1,1-DCE), *cis*-1,2-dichloroethene (*cis*-1,2-DCE), *trans*-1,2-dichloroethene (*trans*-1,2-DCE), tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride (VC). On-post monitoring wells were sampled for the SW-846 Method 6010/6020 metals, lead, cadmium, mercury, and chromium. On-post drinking water wells were also sampled for four additional metals: barium, arsenic, copper, and zinc. Additional samples were collected off-post and from wells with GAC filtration systems. Samples were analyzed by Agriculture & Priority Pollutants Lab Inc. (APPL) in Clovis, California. Chemists validated and verified the data in accordance with the CSSA Quality Assurance Program Plan (QAPP). All detected concentrations of VOCs and metals are presented in Attachment 4.

June 2015 Sampling

Fourteen on-post wells were scheduled for sampling during the June 2015 event. Off-post wells scheduled for sampling in June 2015 included seven private and public drinking water wells. No Westbay well zones were scheduled for sampling in June 2015; however these wells were profiled to collect water level data in the area. Sampling was conducted June 1-15, 2015, and results are included in Attachment 4.

The average groundwater elevation in June 2015 increased 176.73 feet from that measured in March 2015. In San Antonio, water restrictions were dropped to year-round conservation on June 10, 2015. The Trinity Glen Rose Groundwater Conservation District remained under year-round conservation, which went into effect January 2, 2015. The average depth to water in the Lower Glen Rose (LGR) screened wells was 86.88 feet below top of casing (BTOC) or 1162.51 feet above mean sea level (msl).

The maximum contaminant levels (MCLs) were exceeded in on-post monitoring well CS-D, CS-MW1-LGR, and CS-MW36-LGR for PCE and TCE during the June 2015 event. No on-post wells scheduled for sampling exceeded the MCL/AL/SS for metals in June 2015.

Analyses indicated that one off-post well RFR-10 exceeded the MCL for PCE and TCE. Two other wells (LS-5 and OFR-3) had PCE and/or TCE detections above the reporting limit, but below the MCL. These wells are equipped with GAC filtration systems.

September 2015 Sampling

Five on-post wells and 46 Westbay well zones were scheduled for sampling in September 2015 in accordance with the LTMO schedule. All samples were analyzed for VOCs. In addition, the on-post samples were analyzed for selected metals. Analytical results from the September 2015 sampling event are included in Attachment 4.

Sampling was conducted September 8-23, 2015. Average groundwater elevations in September 2015 decreased 119.17 feet from the elevations measured in June 2015. The average depth to water in the LGR screened wells was approximately 220.98 feet below ground surface.

All five on-post wells were analyzed for selected VOCs (CSSA short list) and metals (Cr, Cd, Hg, and Pb). Additional metals (As, Ba, Cu, and Zn) were collected from the drinking water wells. Seven off-post wells and 7 post-GAC samples were also collected in September 2015. Thirty-nine of 46 Westbay well zones scheduled for sampling in September were collected; these wells were also profiled to collect water level data in the area.

The MCLs for PCE and TCE were exceeded in monitoring well CS-MW36-LGR in September 2015. No on-post wells sampled in September 2015 reported metals above the MCL/AL/SS. Seventeen of the 39 Westbay well (01-04) zones exceeded the MCLs for PCE and/or TCE.

Two off-post wells (RFR-10 and OFR-3) reported detections of PCE and/or TCE above the MCL during the September 2015 event. These wells are equipped with a GAC filtration system. Three off-post wells (LS-5, LS-6, and RFR-11) reported VOC concentrations below the MCL but above the RL.

GAC-filtered samples were also collected in September 2015. No VOCs were detected in any of these samples, indicating the GAC systems are functioning properly. GAC-filtered samples will be collected again during the March 2016 event.

December 2015 Sampling

The December 2015 groundwater monitoring was a “snapshot” event, including 98 on- and off-post wells to provide a comprehensive snapshot of contamination plumes. This included 44 on-post and 54 off-post wells. In addition, eight Westbay well zones were scheduled for sampling in December 2015; these wells were also profiled to collect water level data in the area. Sampling was conducted November 30 – December 22, 2015. Laboratory results will be received in January 2016 and summarized in the next progress report.

Off-Post GAC Systems

Based on sampling results received in 2001, 2002, and 2011 indicating VOC levels above or approaching the MCL, GAC filtration systems were installed at six off-post wells. In accordance with the *CSSA Off-Post Monitoring Program Response Plan* dated June 2002 and the Groundwater Monitoring DQOs, the off-post GAC filtration systems are maintained by CSSA and sampled every six months.

Monthly O&M activities for the off-post residential GAC filtration systems were performed this period. Work included inspection and replacement, as needed, of the pre- and post-GAC filters at wells LS-5, LS-6, LS-7, OFR-3, RFR-10, and RFR-11. Post-GAC confirmation samples from all of the off-post GAC systems were collected during the August 2015 event. All VOC results for the post-GAC water samples were non-detect. Semi-annual GAC maintenance was performed February 26, 2015. This involved replacing the first carbon canister in each GAC unit and other routine maintenance. This carbon exchange is performed semi-annually and will be due again in August 2015. In addition, repairs were made at LS-5.

Data Validation and Verification

Laboratory results from sampling efforts and investigations are validated and verified by chemists to ensure results are in compliance with CSSA QAPP requirements. Data validation and verification continued during Period 47.

Meetings

A regulatory meeting was held at CSSA on November 3, 2015, attended by Greg Lyssy of USEPA and Jorge Salazar of TCEQ. Topics discussed included: LTMO, groundwater DQOs, ISCO at AOC-65, the bioreactor at SWMU B-3, and the status of Order documents.

LTMO and DQOs Discussion Items:

- The first 5-year review report will be due in July 2020. It will include data through 2019, and the LTMO schedule will be aligned to collect final “five-year” results in December 2019 event.
- The LTMO and DQO reports will include a plan for notifying neighbors when removing them from sampling program. The notification letters will include graph showing well owner results over time.
- Parsons will also check landowner records with the county appraisal district on a regular basis to align with the five-year review schedule.
- Further explain “as needed” reasons for keeping a well on the sampling list.
- Parsons will provide Mr. Lyssy with a copy of metals results with summary so he can evaluate reducing metals. He would like to review the proposal to drop two VOCs; since there is no reduction in cost he isn’t sure of the benefit in reducing.
- After the above comments have been incorporated into the LTMO and DQO documents, Parsons will send the LTMO and DQO documents to EPA and TCEQ for comment.
- Mr. Lyssy requested Parsons revise/reduce the colors in Table 5.2 and map figures in Section 5 of the LTMO report.
- Additionally, if a well owner outside of the 1.5-mile radius of CSSA requests a sample, that sampling, if done, would not be part of the DQO program.

AOC-65 and SWMU B-3 Discussion Items:

- Parsons presented results on previous ISCO injections and discussed upcoming injections and remediation objectives for AOC-65.
- Parsons discussed possible passive methods for delivering permanganate in the future (such as permanganate wax). USEPA indicated that additional information about these options should be presented in future meetings.
- Parsons presented an update on the SWMU B-3 bioreactor including maintenance issues, groundwater contribution by well, and the status of the solar panel array.
- The next regulatory meeting will be held in summer 2016. At that time the results of recent ISCO injection/monitoring will be discussed.

Administrative Order Closure Documents:

The remaining documents in the Administrative Order discussed at the meeting include the: Corrective Measures Implementation Program Plan (CMIPP), Corrective Measures Design (CMD) Report, Construction Quality Assurance Program Plan (CQAPP), and the Corrective Measures Implementation (CMI) Report. Since the corrective measures planned for CSSA are extensions of actions already initiated as treatability studies and interim actions, these documents will document the design and construction and the plan for operating and maintaining them in the future.

Environmental Encyclopedia Updates

The CSSA website (www.stanley.army.mil) was updated with documents added to the Environmental Encyclopedia through the end of December 2015. The website serves as CSSA's Administrative Record as required under the Order. The Environmental Encyclopedia was updated with all final reports through December 2015. Updates made in Period 47 included the following:

- Period 46 Progress Report (January 1, 2015 – June 30, 2015)
- TCEQ Approval Letter (for the Amendment to the Class V Injection Wells Report)
- Letter to Well Owner (Groundwater Sampling of Water Well AR-1)
- THC Concurrence Letter (for the Cultural Resources Management Plan)
- June 2015 Well Owner Letters
- EPA Final Decision Document for CSSA
- Notification to EPA of Quarterly Groundwater Monitoring Activities (for September 8th through September 18th)
- March 2015 Well Owner Letters
- June 2015 On-Post and Off-Post Groundwater Monitoring Reports
- March 2015 On-Post and Off-Post Groundwater Monitoring Reports
- Notification to EPA of Quarterly Groundwater Monitoring Activities (for November 30th through December 22nd)
- September 2015 Well Owner Letters
- September 2015 Off-Post Groundwater Monitoring Report
- 2014 Annual Groundwater Report
- Regulatory Meeting Minutes (November 3, 2015)
- Status Update Report for TCEQ (Class V Injection Well Authorization Update for SWMU B-3 and AOC-65)
- Semiannual Status Report (June 2015 – December 2015) of the Pilot Study Class V Aquifer Remediation Injection Wells
- Notification of Plugging and Abandonment of Inactive Wells CS-9 and CS-11
- Various correspondence to and from CSSA; and
- Various meeting minutes.

Summary of Contacts

Letters summarizing the results of the June and September 2015 off-post groundwater monitoring events were mailed to owners of the off-post wells in Period 47. Groundwater sampling notification letters were sent to the USEPA and TCEQ one month prior to the start of the June and September 2015 sampling events. Other Order-related correspondence during Period 47 included:

- Submittal of the Draft CMIPP to USEPA and TCEQ (June 6, 2015)
- Submittal of Period 46 Semi-Annual EPA Progress Report (July 10, 2015)
- Submittal of Draft CMD Report to USEPA and TCEQ (November 24, 2015)

PROJECTED WORK FOR THE NEXT PERIOD

Groundwater Monitoring

As outlined in the CMS and approved by the DD, routine off-post groundwater sampling which began in 2001 would continue into the foreseeable future. Quarterly groundwater monitoring on- and off-post will continue in accordance with the approved LTMO and DQOs. During Period 48, these events will be conducted in March and June 2016. Quarterly and annual groundwater monitoring reports will be submitted next period. O&M at the residential GAC filtration systems (LS-5, LS-6, LS-7, OFR-3, RFR-10, and RFR-11) will be conducted every three weeks during Period 48. The semi-annual carbon exchange will be performed in February 2016.

SWMU B-3 Bioreactor

Monitoring of the bioreactor at SWMU B-3 will continue during Period 48 as described in the CMS and approved by the DD. Monitoring requirements will be performed to meet TCEQ's UIC authorization requirements. Performance monitoring data will be collected in accordance with the Bioreactor O&M Manual.

AOC-65 ISCO

CSSA will continue quarterly monitoring of the designated ISCO wells as identified in the AOC-65 Operation and Monitoring Plan as part of the performance determination of the ISCO corrective measures as described in the CMS and approved by the DD. Scheduled quarterly groundwater monitoring will continue during Period 48 (February and May 2015) for permit-required and performance-based parameters. The ISCO Phase III Assessment Report will also be submitted next period.

Meetings

Quarterly groundwater meetings will be held prior to quarterly events scheduled in March and June 2016 to discuss the progress and continued implementation of the remedies outlined in the CMS and approved by the DD.

**Table 2, Environmental Project Task Completion to Date
 (Values updated through November 30, 2015)**

Project Number	Description of Task	Relation to Order	Percent Complete	Start/End Dates
Order 37	UST Investigations	NA	100%	1991-1995
Order 52	Investigation of F-14	I/SM/RFI	100%	1992-1993
Order 67	Groundwater sampling, Water Well Inventory, Hydrogeologic Report	I/SM/RFI	100%	1992-1996
Order 71	Environmental Assessment	I/M	100%	1992-1993
Order 126	B-20, F-14 Investigations, Background Soils Study	RFI	100%	1994-1996
RL17	Geophysical surveys, Well Installations Soil Sampling and Groundwater sampling	I/SM/RFI	100%	1995-2003
RL33	Site investigations, B-20 treatability studies and unexploded ordnance investigation	RFI	100%	1996-2002
Order 23	Groundwater Sampling	RFI	100%	1996-1998
RL53	SWMU and AOC Investigations	RFI	100%	1997-2003
RL83	Geophysical Surveys	RFI	100%	1999-2003
RL74	Current Conditions Report, Community Relations, Groundwater Monitoring	RFI	100%	1999-2001
DO5068	Soil Gas Surveys	RFI	100%	1999-2002
DO23	Groundwater Monitoring	RFI	100%	1998-2001
DO5084	Building 90 Investigation, Groundwater Monitoring	RFI	100%	2000-2003
TO0058	Treatability Study for AOC-65	RFI	100%	2001-2005
TO0042	Well Installations and Groundwater Monitoring	I/SM/RFI	100%	2001-2006
TO0017	East Pasture Removal Action	Other	100%	2005-2006
TO0019	SWMU Closures	RFI	100%	2003-2006
TO0005	Environmental Program Technical Support	I/SM/RFI	100%	2003-2007
TO0098	Miscellaneous Studies	Other	100%	2004-2007
TO0008	Groundwater Monitoring	I/SM/RFI	100%	2003-2008
TO0006	SWMU B-3 and AOC-65 Remediation	I/SM/RFI	100%	2004-2008
TO0207	Environmental Support, Groundwater Monitoring	I/SM/RFI	100%	2006-2008
DY01 (Weston)	Affected Property Assessment Investigations	RFI	100%	2006-2007
DY01 (Parsons)	Environmental Compliance, SWMU, and AOC Closure Investigations	RFI	100%	2006-2010
DY02 (Parsons)	Environmental Compliance, SWMU and AOC closure Investigations	I/SM/RFI	100%	2007-2009
DO11 (Parsons)	Environmental and Groundwater Investigations	RFI	100%	2008-2010

**Table 2 Continued, Environmental Project Task Completion to Date
 (Values updated through November 30, 2015)**

Project Number	Description of Task	Relation to Order	Percent Complete
DY02 (Weston)	Removal Action at AOC-64, B-71	RFI	100%
H&A (Parsons)	Administrative Support and Environmental Services	Other/RFI	100%
DO50 (Parsons)	Environmental and Groundwater Investigations	RFI	100%
Army Contract (Parsons)	Environmental and Groundwater Investigations	RFI	100%
DO07(Parsons)	Environmental Program Support	RFI	100%
Army Contract TO1 (Parsons)	Program Management	RFI	100%
Army Contract TO2 (Parsons)	O&M, Compliance, & Monitoring	RFI	100%
Army Contract TO3 (Parsons)	Site Investigations and Closures	RFI	100%
Army Contract TO4 (Parsons)	Environmental Studies	RFI/Other	100%
Army Contract TO7 (Parsons)	Environmental Program Support	RFI/CMS	100%

**Table 2 Continued, Project Task Completion to Date
 (Values updated through November 30, 2015)**

Project Number	Description of Task	Relation to Order	Percent Complete
Army Contract TO8 (Parsons)	Environmental Program and Facilities Support		
	Project Management	CMS/CMI	70%
	Administrative Support	CMS/CMI	70%
	Meetings	CMS/CMI	70%
	B-3 and AOC-65 Systems Operation	CMS/CMI	70%
	Compliance and Sampling	CMS/CMI	65%
	Groundwater Monitoring	CMS/CMI	60%
	Technology Assessment – Solar Array	CMS/CMI	90%
	AOC-65 Monitoring Wells and Studies	CMS/CMI	5%

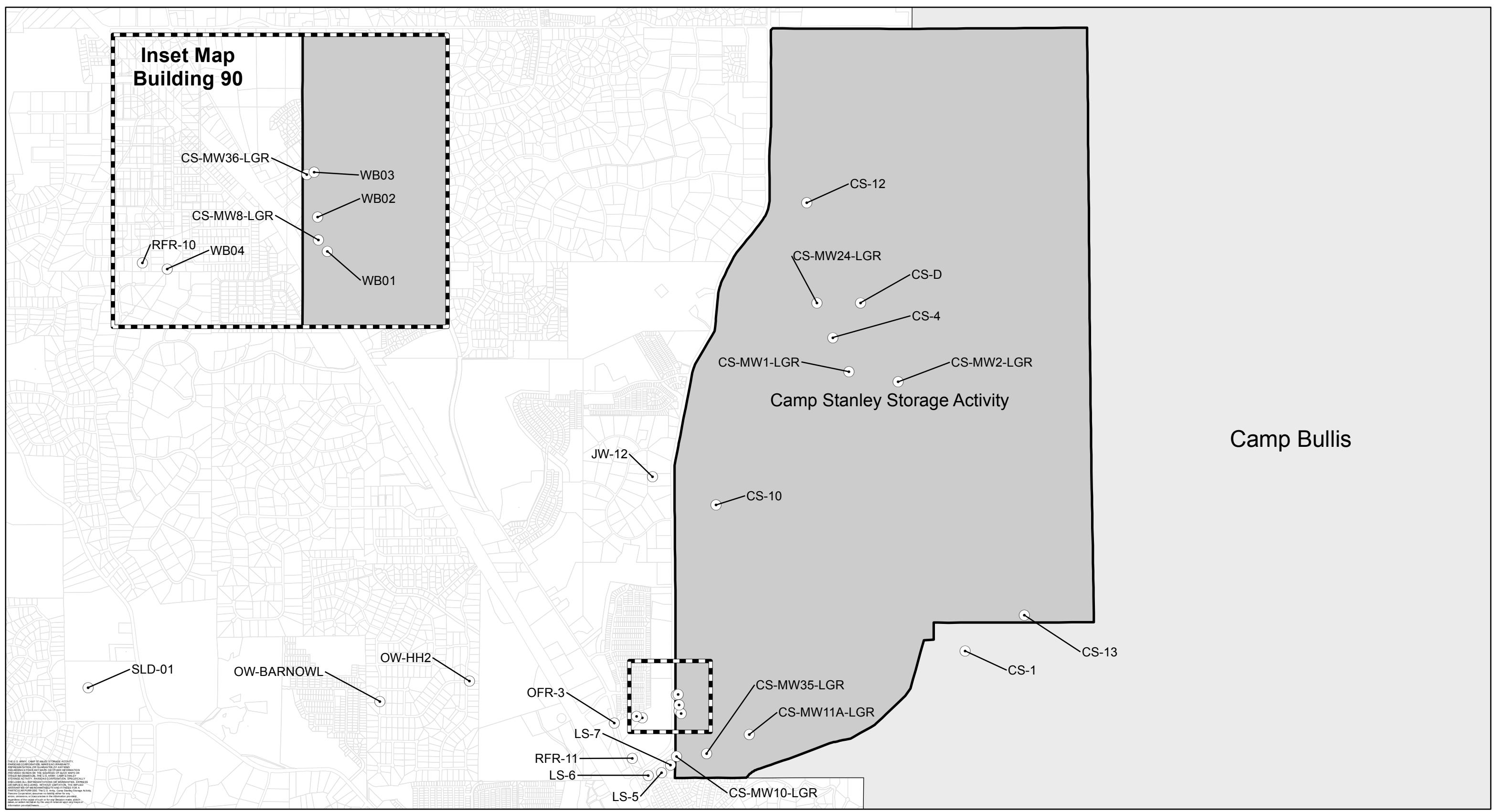
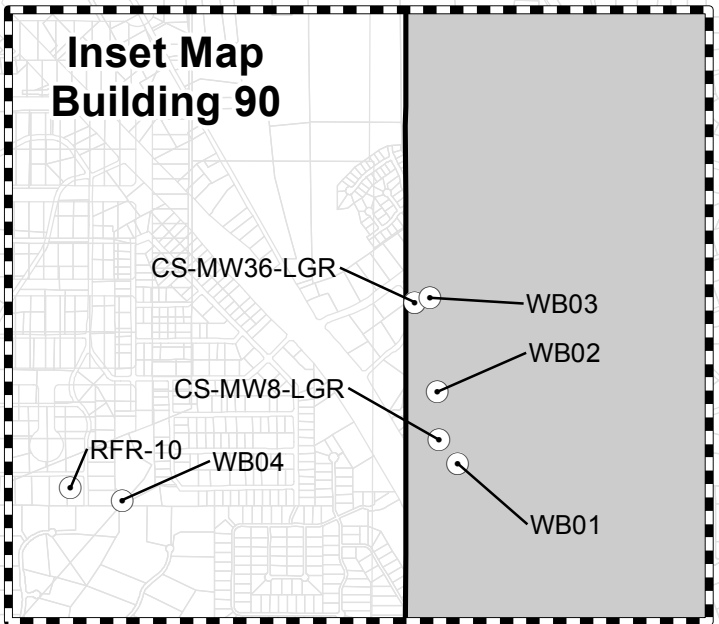
Table 3, Project Team Contact Information

Name	Organization/Role	Street Address	City, State, Zip	Phone No.	Fax No.	E-mail
Arciniaga, Laura	Parsons, Task Mgr	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6855	(512) 719-6099	laura.arciniaga@parsons.com
Burdey, Julie	Parsons, Project Mgr	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6062	(512) 719-6099	julie.burdey@parsons.com
Chang, Tammy	Parsons, Senior Scientist	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6092	(512) 719-6099	tammy.chang@parsons.com
Elliott, Samantha	Parsons, Task Mgr	c/o Environmental Office, 25800 Ralph Fair Road	Boerne, TX 78015-4800	(210) 347-6012	(210) 295-7386	Samantha.elliott@parsons.com
Kraintz, Felicia	CSSA Environmental Program Manager	25800 Ralph Fair Road	Boerne, TX 78015-4800	(210) 295-7067	(210) 295-7386	kraintzf@cssamma.com
Lyssy, Greg	USEPA, Project Manager	1445 Ross Avenue (6PD-N)	Dallas, TX 75202-2733	(214) 665-8317	(214) 665-6660	lyssy.gregory@epa.gov
Pearson, Scott	Parsons, Task Mgr	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6087	(512) 719-6099	william.scott.pearson@parsons.com
Pirani, Amanda	TCEQ, Project Manager	P.O. Box 13087, MC-127	Austin, TX 78711-3087	(512) 239-6526		Amanda.Pirani@tceq.texas.gov
Rice, Ken	Parsons, Task Mgr	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6050	(512) 719-6099	ken.r.rice@parsons.com
Salazar, Jorge	TCEQ	14250 Judson Road	San Antonio, TX 78233	(210) 403-4059		jsalazar@tceq.state.tx.us
Shirley, Jason (LTC, retired)	CSSA Installation Manager	25800 Ralph Fair Road	Boerne, TX 78015-4800	(210) 295-7416	(210) 295-7386	jason.d.shirley.civ@mail.mil

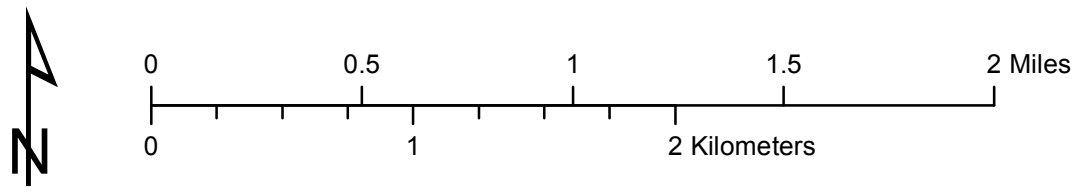
ATTACHMENT 1

ON-POST AND OFF-POST SAMPLED WELLS FIGURE

**Inset Map
Building 90**



THIS IS A PRELIMINARY MAP. IT IS NOT TO BE USED FOR CONSTRUCTION OR AS A BASIS FOR ANY DECISIONS. IT IS THE PROPERTY OF PARSONS AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. PARSONS AND ITS CONSULTANTS MAKE NO WARRANTY, REPRESENTATION, OR GUARANTEE OF ANY KIND, EXPRESS OR IMPLIED, REGARDING THE ACCURACY, COMPLETENESS, OR QUALITY OF THE INFORMATION PROVIDED HEREON. THE USER ASSUMES ALL LIABILITY FOR ANY AND ALL DAMAGES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING FROM THE USE OF THIS INFORMATION. PARSONS AND ITS CONSULTANTS SHALL NOT BE HELD LIABLE FOR ANY AND ALL DAMAGES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING FROM THE USE OF THIS INFORMATION. PARSONS AND ITS CONSULTANTS SHALL NOT BE HELD LIABLE FOR ANY AND ALL DAMAGES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING FROM THE USE OF THIS INFORMATION.



	Sampled Well		Camp Bullis Boundary
	CSSA Boundary		2013 Bexar County Parcels

Attachment 1

June 2015 and September 2015 Sampled
On-Post and Off-post Groundwater Wells
Camp Stanley Storage Activity

PARSONS

ATTACHMENT 2
SUMMARY OF STATUS OF EACH SWMU/AOC/RMU SITE

**ATTACHMENT 2
STATUS OF SWMUs, AOCs, AND RMUs at CSSA**

Unit No.	Description	Investigation Report(s)	Recommendations	Requested Action				Closure Approved	Closure Type
				RRS1	NFA	Delisting	TRRP		
B-1	Powder and ammo burn area (1954).	RFI/Closure Report July 2002	NA	X				November-02	RRS1
B-2	Small arms ammunition burning area (1954) - North Pasture	RFI/Closure Report June 2002 Closure Report March 2005	Closure once range is inactive						
B-3	Landfill area (garbage disposal and burning trash); filled in 1990-91.	RFI Report March 2005	Bioreactor remediation ongoing						
B-4	Classified burn area (documents and trash).	APAR October 2012	Closure				X	February-13	TRRP
B-5	Possible fired small arms ammo brass area. Not located.	RFI/Closure Report July 2002	NA	X				October-02	RRS1
B-6	Possible solid waste disposal area.	RFI/Closure Report July 2002	NA	X				October-02	RRS1
B-7	Possible fired small arms ammunition brass disposal area	RFI/Closure Report July 2002	NA	X				October-02	RRS1
B-8	Fired small arms ammo brass disposal area (piles of fire bricks, ammo shells) - North Pasture	RFI Report December 2003	Excavate as necessary once range is inactive						
B-9	Miscellaneous solid waste (metal and weapons) disposal area.	RFI/Closure Report September 2002	NA	X				March-03	RRS1
B-10	Ammunition disposal area.	RFI/Closure Report May 2003	NA	X				January-04	RRS1
B-11	Miscellaneous solid waste disposal (ammo, scrap metal, const. debris).	RFI Closure Report June 04	NA	X				September-04	RRS1
B-12	Landfill, WPA trash when igloos were being built	RFI Report April 2005	NA	X				July-05	RRS1
B-13	Trash dump area.	RIR April 2013	Closure		X			July-13	NFA
B-14	Possible fired brass area - not located.	Delisting Request November 2007	NA			X		February-08	Delisting
B-15/16	Landfill (target vehicles, weapons mounts)	RIR June 2011	NA		X			September-11	NFA
B-19	Solid waste disposal area (metals and weapons).	RFI/Closure Report June 2002	NA	X				September-02	RRS1
B-20/21	Former OB/OD area & ammunition disposal areas - North Pasture	RFI Report July 2002	Closure once range is inactive						
		Combined with B-20							
B-22	Burn area (artillery shells).	RFI/Closure Report August 2002	NA	X				December-02	RRS1

**ATTACHMENT 2
STATUS OF SWMUs, AOCs, AND RMUs at CSSA**

Unit No.	Description	Investigation Report(s)	Recommendations	Requested Action				Closure Approved	Closure Type
				RRS1	NFA	Delisting	TRRP		
B-23	Disposal trenches (two green canisters)	RFI Report April 2005	NA	X				July-05	RRS1
B-23A	Disposal Trench (glass ampoules of liquid)	RFI Closure Report September 2004	NA	X				March-05	RRS1
B-24	Spent ammo/rockets area - North Pasture	RFI Report May 2002	MC removal once range is inactive						
B-25	Possible disposal trench	RFI Report April 2005	NA	X				July-05	RRS1
B-26	Possible disposal trench	Delisting Report August 2004	NA			X		November-04	Delisting
B-27	Sanitary landfill, consisting of 5-6 trenches (6 ft deep, 3 ft wide).	RFI Report July 2002 RIR September 2011	NA		X			December-11	NFA
B-28	Disposal trenches (molten metal, ammo, ammo parts)	RFI Report April 2002 RIR July 2011	NA		X			November-11	NFA
B-29	Solid waste disposal area (in old quarry)	RFI Report April 2005	NA	X				February-08	RRS1
B-30	Solid waste disposal area	RFI Report September 2004	NA	X				February-05	RRS1
B-31	Lead shot/sand pipe bedding	RFI/Closure Report July 2002	NA	X				November-02	RRS1
B-32	Lead shot/sand pipe bedding	RFI/Closure Report January 2003	NA	X				November-03	RRS1
B-33	Lead shot/sand pipe bedding	RFI Report September 2004	NA	X				November-04	RRS1
B-34	Maintenance pit floor drain and discharge point	RFI Report August 2002	Closure		X			April-14	NFA
B-71	Livestock area. Inner cantonment, SW of Well 16.	APAR	NA				X	October 2011	TRRP
AOC-64	Area east of SWMU B-4; flares observed in the area	APAR	NA				X	October 2011	TRRP
Bldg 40	less-than 90-day accumulation container storage area	RFI/Closure Report September 2003	NA	X				January-04 and January-06	RRS1
Bldg 43	Inactive makeshift ammo demolition facility	RFI Report April 2005	NA	X				August-05	RRS1
DD	Dud ammunition disposal area	RFI Report January 2005	NA	X				April-05	RRS1

**ATTACHMENT 2
STATUS OF SWMUs, AOCs, AND RMUs at CSSA**

Unit No.	Description	Investigation Report(s)	Recommendations	Requested Action				Closure Approved	Closure Type
				RRS1	NFA	Delisting	TRRP		
F-14	Hazardous waste storage area (<90-day)	RFI/Closure Report, 1995	NA	X				November-95	RRS1
I-1	Inactive incinerator (built in 1943), currently used for transformer storage	RFI Report February 2003	NA				X	November-08	NFA
O-1	Waste liquid/sludge oxidation pond (1975)	RFI/Closure Report October 2000	NA	X				April-02	RRS1
Coal Bins	Coal bins (no longer in use)	Delisting Requested January 2003	NA			X		February-08	Delisting
AOC-35	Area immediately around Well 16. Northeast area of inner cantonment.	RFI/Closure Report October 2002	NA	X				February-03	RRS1
AOC-36	Area between Well 16 and B-3. Possible waste verified not present by magnetometer survey.	RFI/Closure Report April 2002	NA	X				August-02	RRS1
AOC-37	Livestock area. NW of Well 16 and N of Well D.	RFI/Closure Report June 2004	NA	X				January-05	NFA
AOC-38	Livestock area. Inner cantonment, SW of Well 16.	RFI Report September 2004	NA	X				February-05	RRS1
AOC-39	None. Area west of Well 16 between North Outer Rd and cantonment fence.	RFI/Closure Report April 2002	NA	X				September-02	RRS1
AOC-40	None. Area east of Well 16 between North Outer Rd and cantonment fence.	RFI/Closure Report May 2002	NA	X				August-02	RRS1
AOC-41	Gate area east of well 16. North Pasture, north of gate 6.	NFA Report April 2005	NA		X			July-05	NFA
AOC-42	None. South of SWMUs B-28 and B-19, west of B-4.	RFI Report October 2002 RIR August 2011	NA		X			December-11	NFA
AOC-43	Shallow trench without mounds. Metal, UXO. Located 50 ft south of B-7.	RFI/Closure Report October 2002	NA	X				February-03	RRS1
AOC-44	Fox holes and trenches south of B-9 along west slope of hill. UXO includes Stokes mortars and 20-lb bombs.	Delisting Report April 2005	NA			X		July-05	Delisting
AOC-45	Flat area with spent and undamaged bullets. Located east of B-31, near bend in road.	RIR July 2011	NA		X			October-11	NFA
AOC-46	Bermed area with stockpile of lead shot and sand. Located south of Engineering on east side of Thompkins Road.	RFI/Closure Report April 2005	NA	X				July-05	RRS1
AOC-47	Area of trenches and mounds (similar to B-15/16). South of B-15/16, in SW area of East Pasture.	RFI/Closure Report June 2002	NA	X				September-02	RRS1

**ATTACHMENT 2
STATUS OF SWMUs, AOCs, AND RMUs at CSSA**

Unit No.	Description	Investigation Report(s)	Recommendations	Requested Action				Closure Approved	Closure Type
				RRS1	NFA	Delisting	TRRP		
AOC-48	Three N-S trending mounds and a construction debris pile. Located north of B-15/16.	Delisting Report August 2004	NA			X		November-04	Delisting
AOC-49	Trench (4 x 7 ft) without surficial debris. Located SW of deer stand 41 in central East Pasture.	Delisting Report April 2005	NA			X		July-05	Delisting
AOC-50	Area with orange discolored material (most likely nickel penetrate) at ground surface. South of B-30 along gravel road.	RFI/Closure Report January 2005	NA	X				April-05	RRS1
AOC-51	East pasture, east of active range, approximately 25 acres, area around B-9	RIR July 2012	Closure		X			October-12	NFA
AOC-52	Area west of B-4 towards Salado Creek near trees, two trenches	RIR August 2011	NA		X			December-11	NFA
AOC-53	Building foundation near B-27 at Central Road and road to "D" Tank, batteries at rear of slab	RFI/Closure Report April 2005	NA	X				July-05	RRS1
AOC-54	Area near gutting pit, east of Welding Shop Building, right side of road batteries were stored in the area	Closure Report July 2004	NA	X				November-04	RRS1
AOC-55	Landfill, south of Tenberg Drive, east of Salado Creek	RFI/Closure Report Feb 04	NA	X				June-08	RRS1
AOC-56	Landfill, at intersection of Bernard Road and East Outer Road, surface depression on south side of intersection	Closure Report June 04	NA	X				September-04	RRS1
AOC-57	East of Building 98 and KOA Area, cleaning/maintenance activities performed at temporary structures	RIR May 2011	NA		X			September-11	NFA
AOC-58	Suspected disposal trench within Inner Cantonment	RFI Report October 2002 RIR August 2011	NA		X			December-11	NFA
AOC-59	Trench-type anomaly located west Test Pad in the East Pasture	RIR July 2011	NA		X			October-11	NFA
AOC-60	Trench located west of tunnel and entrance roadway in the East Pasture.	Delisting Report April 2005	NA			X		July-05	Delisting
AOC-61	Suspected landfill	RFI/Closure Report October 2002	NA	X				February-03	RRS1
AOC-62	Located west of monitoring well MW-2 and east of Salado Creek.	RIR August 2011	NA		X			December-11	NFA

**ATTACHMENT 2
STATUS OF SWMUs, AOCs, AND RMUs at CSSA**

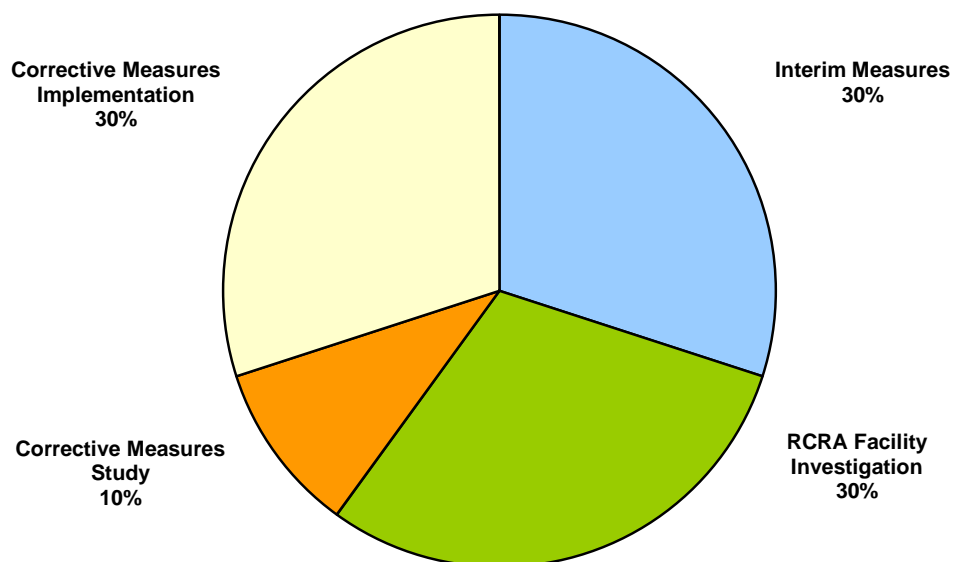
Unit No.	Description	Investigation Report(s)	Recommendations	Requested Action				Closure Approved	Closure Type
				RRS1	NFA	Delisting	TRRP		
AOC-63	Area consisting of 3 barrels containing rocks, south of deer stand 41 in the East Pasture.	APAR October 2008	NA				X	July-09	TRRP
AOC-65	A concrete pit area that housed a metal vat that contained TCE and PCE.	RFI Report August 2003	Additional investigation, ISCO remediation ongoing						
AOC-66	Area north of Well 16 in the outer cantonment.	Closure Report June 04	NA	X				February-05	NFA
AOC-67	Concrete pad near Building 90 housed a vat containing cleaning solvents.	RIR July 2010	NA		X			September-10	NFA
AOC-68	Area includes metal slag/debris storage area from Wheelabrator operations next to Building 90-2.	RIR July 2010	NA		X			September-10	NFA
AOC-69	Located on west side of CSSA.	RIR June 2009	NA		X			October-09	NFA
AOC-70	Building used to mix pesticides. Near Building 1.	RIR June 2011	NA		X			September-11	NFA
AOC-72	Area containing concrete, possible asbestos. Located east of Building 94, in SW CSSA.	RIR March 2012	Closure		X			May-12	NFA
AOC-73	Ranch landfill with overgrown trenches. Near Well I1, in northwest corner of CSSA.	RIR September 2008	NA		X			January-09	NFA
AOC-74	Area with scattered building debris near Building 605 in the inner cantonment.	RIR February 2012	Closure		X			May-12	NFA
AOC-75	Area with high levels of mercury and barium.	RIR July 2013	Closure		X			November-13	NFA
RMU-1	Active firing range in the East Pasture	--	Investigation once range is inactive.						
RMU-2	Rifle range located in the inner cantonment.	RIR November 2011	NA		X			February-12	NFA
RMU-3	Firing range berm.	RIR May 2013	Closure		X			May-13	NFA
RMU-4	Former rifle range in East Pasture.	RIR October 2013	Closure		X			February-14	NFA
RMU-5	Former rocket range in North Pasture.	RIR June 2012	Closure		X			September-12	NFA

ATTACHMENT 3
OVERALL H ORDER PERCENT COMPLETE

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Project	% of Phase	% Complete	% of Activity Complete	% of Task Complete
Interim Measures	30%				99.5%
Interim Measures Work Plan		7%	100.0%	7.0%	
Interim Measures Implementation Reports		70%	99.5%	69.6%	
		23%	99.3%	22.8%	
RCRA Facility Investigation	30%				99%
Preliminary Report		5%	100%	5%	
RFI Workplan		5%	100%	5%	
Facility Investigation		40%	100%	40%	
Risk Assessment		10%	100%	10%	
Investigation Analysis		10%	100%	10%	
Groundwater Investigation		15%	99%	15%	
Treatability Studies		10%	95%	10%	
Progress Reports		5%	99%	5%	
Corrective Measures Study	10%				100%
Identify and Develop Alternatives		15%	100%	15%	
Evaluate Alternatives		60%	100%	60%	
Reports		25%	100%	25%	
Corrective Measures Implementation	30%				55%
Implementation Program Plan		5%	99%	5%	
Corrective Measure Design		15%	99%	15%	
Corrective Measure Construction		70%	50%	35%	
Corrective Measures Report		10%	0%	0%	
% of Phase Complete					86%

Section 3008(h) Order Tasks



Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
1 Interim Measures Work Plan	7%					100.0%	
Draft IM Workplan		80%	100%	80%	0%		
Draft Final IM Workplan		15%	100%	15%	0%		
Final IM Workplan		5%	100%	5%	0%		
2 Interim Measures Implementation	70%					99.5%	
Sample 3 Off-Site Wells		1%	100%	1%	0%		
Sample 20 Off-Site Wells (6 events)		6%	100%	6%	0%		(remaining off-post sampling conducted under the RFI task)
2000 Groundwater Monitoring (4 events)		2%	100%	2%	0%		
2001 Groundwater Monitoring (4 events)		2%	100%	2%	0%		
2002 Groundwater Monitoring (4 events)		2%	100%	2%	0%		
2003 Groundwater Monitoring (4 events)		2%	100%	2%	0%		
2004 Groundwater Monitoring (4 events)		2%	100%	2%	0%		
2005 Groundwater Monitoring (4 events)		2%	100%	2%	0%		
2006 Groundwater Monitoring		2%	100%	2%	0%		
2007 Groundwater Monitoring		2%	100%	2%	0%		
2008 Groundwater Monitoring		2%	100%	2%	0%		
2009 Groundwater Monitoring		2%	100%	2%	0%		
2010 Groundwater Monitoring		2%	100%	2%	0%		
2011 Groundwater Monitoring		2%	100%	2%	0%		
2012 Groundwater Monitoring		2%	100%	2%	0%		
2013 Groundwater Monitoring		2%	100%	2%	0%		
2013 Groundwater Monitoring		2%	100%	2%	0%		
2014 Groundwater Monitoring		2%	100%	2%	0%		
2015 Groundwater Monitoring		2%	100%	2%	0%		
Locate and map off-site wells		1%	100%	1%	0%		
O-1 Soil Borings		3%	100%	3%	0%		
O-1 Excavation, Stabilization, Diposal		12%	100%	12%	0%		
Establish Treatment Unit		1%	50%	1%	50%		may or may not be necessary. After treatability studies.
Determine appropriate disposition of soil piles		5%	100%	5%	0%		Unfunded CSSA future work.
Treat/dispose of soil piles		20%	100%	20%	0%		Not included as IM in the Order.
AOC 50 Excavation and Disposal		3%	100%	3%	0%		
AOC 65 Excavation and Disposal		8%	100%	8%	0%		
3 Reports	23%					99.3%	
Quarterly Progress Report 1 (August 1999)		0.6%	100%	1%	0%		
Quarterly Progress Report 2 (November 1999)		0.6%	100%	1%	0%		
Quarterly Progress Report 3 (February 2000)		0.6%	100%	1%	0%		
Quarterly Progress Report 4 (May 2000)		0.6%	100%	1%	0%		
Quarterly Progress Report 5 (August 2000)		0.6%	100%	1%	0%		
Quarterly Progress Report 6 (November 2000)		0.6%	100%	1%	0%		
Quarterly Progress Report 7 (February 2001)		0.6%	100%	1%	0%		
Quarterly Progress Report 8 (May 2001)		0.6%	100%	1%	0%		
Quarterly Progress Report 9 (August 2001)		0.6%	100%	1%	0%		
Quarterly Progress Report 10 (November 2001)		0.6%	100%	1%	0%		
Quarterly Progress Report 11 (February 2002)		0.6%	100%	1%	0%		
Quarterly Progress Report 12 (May 2002)		0.6%	100%	1%	0%		
Quarterly Progress Report 13 (August 2002)		0.6%	100%	1%	0%		
Quarterly Progress Report 14 (November 2002)		0.6%	100%	1%	0%		
Quarterly Progress Report 15 (February 2003)		0.6%	100%	1%	0%		
Quarterly Progress Report 16 (May 2003)		0.6%	100%	1%	0%		
Quarterly Progress Report 17 (August 2003)		0.6%	100%	1%	0%		
Quarterly Progress Report 18 (November 2003)		0.6%	100%	1%	0%		
Quarterly Progress Report 19 (February 2004)		0.6%	100%	1%	0%		
Quarterly Progress Report 20 (May 2004)		0.6%	100%	1%	0%		
Quarterly Progress Report 21 (August 2004)		0.6%	100%	1%	0%		
Quarterly Progress Report 22 (November 2004)		0.6%	100%	1%	0%		
Quarterly Progress Report 23 (February 2005)		0.6%	100%	1%	0%		
Quarterly Progress Report 24 (May 2005)		0.6%	100%	1%	0%		
Quarterly Progress Report 25 (August 2005)		0.6%	100%	1%	0%		
Quarterly Progress Report 26 (October 2005)		0.6%	100%	1%	0%		
Quarterly Progress Report 27 (January 2006)		0.6%	100%	1%	0%		
Quarterly Progress Report 28 (April 2006)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 29 (Dec 2006)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 30 (June 2007)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 31 (Dec 2007)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 32 (June 2008)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 33 (Dec 2008)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 34 (June 2009)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 35 (Dec 2009)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 36 (June 2010)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 37 (Dec 2010)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 38 (June 2011)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 39 (Dec 2011)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 40 (June 2012)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 41 (Dec 2012)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 42 (June 2013)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 43 (Dec 2013)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 44 (June 2014)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 45 (Dec 2014)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 46 (June 2015)		0.6%	100%	1%	0%		
Semi-annual Progress Rpt 47 (Dec 2015)		0.6%	100%	1%	0%		
Draft O-1 IM Report		19%	100%	19%	0%		
Draft final O-1 IM Report		12%	100%	12%	0%		
Final O-1 IM Report		5%	100%	5%	0%		
Draft Soil Pile IM Report		20%	100%	20%	0%		
Draft Final Soil Pile IM Report		12%	100%	12%	0%		
Final Soil Pile IM Report		5%	100%	5%	0%		
% of Phase Complete						99.46%	

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
Preliminary Report	5%					100.0%	
Draft DCC Report		80%	100%	80%	0%		
Draft Final DCC Report		15%	100%	15%	0%		
Final DCC Report		5%	100%	5%	0%		
RFI Workplan	5%					100.0%	
Draft Community Relations Plan		25%	100%	25%	0%		
Draft Final CRP		5%	100%	5%	0%		
Final CRP (2006)		10%	100%	10%	0%		
Draft RFI Workplans		20%	100%	20%	0%		
Draft Final RFI Workplan		5%	100%	5%	0%		
Final RFI Workplans		5%	100%	5%	0%		
Final Work Plans (DY01)		10%	100%	10%	0%		
Draft Work Plans (DY02)		10%	100%	10%	0%		
Final Work Plans (DY02)		10%	100%	10%	0%		
Facility Investigation¹	40%					100.0%	
Small Areas (0-2 acres in size)	74%						
B-3 Investigation/Report		1.24%	100%	1.240%	0%		Final report submitted, additional work required.
B-4 Investigation/Report		1.24%	100%	1.240%	0%		TRRP closure approved Feb 13
B-5 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Oct 02
B-6 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Oct 02
B-7 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Oct 02
B-8 Investigation/Report		1.24%	100%	1.240%	0%		Active range
B-9 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Mar 03
B-10 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Jan 04
B-11 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Sept 04
B-12 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved July 05
B-13 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved July 13
B-15/16 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Sept 11
B-19 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Sept 02
B-23 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved July 05
B-23A Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Mar 05
B-25 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved July 05
B-26 Investigation/Report		1.24%	100%	1.240%	0%		Delisting approved November 04
B-27 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Dec 11
B-28 Investigation/Report		1.24%	100%	1.240%	0%		NFA Closure approved Nov 11
B-30 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Feb 05
B-31 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Nov 02
B-32 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Nov 03
B-33 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Nov 04
B-34 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Apr 14
B-71 Investigation/Report		1.24%	100%	1.240%	0%		TRRP closure approved Oct 11
BLDG-43 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Sept 05
Demo Dud Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Apr 05
F-14 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved Nov 95
I-1 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved Nov 08
AOC 35 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Feb 03
AOC 37 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Jan 05
AOC 39 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Sept 02
AOC 40 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Aug 02
AOC 43 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved Feb 03
AOC 44 Investigation/Report		1.24%	100%	1.240%	0%		Delisting approved July 2005
AOC 45 Investigation/Report		1.24%	100%	1.240%	0%		NFA Closure Approved Oct 11
AOC 46 Investigation/Report		1.24%	100%	1.240%	0%		RRS1 closure approved July 05
AOC 47 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved Sep 02

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
AOC 49 Investigation/Report		1.24%	100%	1.240%	0%		Delisting approved July 05
AOC 50 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved Apr 05
AOC 52 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Dec 11
AOC 53 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved July 05
AOC 54 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved Nov 04
AOC 55 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved June 08
AOC 56 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved Sept 04
AOC 58 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Dec 11
AOC 59 Investigation/Report		1.24%	100%	1.240%	0%		NFA Closure Approved Oct 11
AOC 60 Investigation/Report		1.24%	100%	1.240%	0%		Delisting approved July 05
AOC 61 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved Feb 03
AOC 62 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Dec 11
AOC 63 Investigation/Report		1.24%	100%	1.240%	0%		Closure approved Aug 09
AOC 64 Investigation/Report		1.24%	100%	1.240%	0%		TRRP closure approved Oct 11
AOC 67 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Sept 10
AOC 68 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Sept 10
AOC 69 Investigation/Report		1.24%	100%	1.240%	0%		TRRP closure approved Oct 09
AOC 70 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Sept 11
AOC 72 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved May 12
AOC 73 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved July 09
AOC 74 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved May 12
AOC 75 Investigation/Report		1.24%	100%	1.240%	0%		NFA closure approved Nov 13
Medium Areas (2-10 acres in size)							
B-1 Investigation/Report		1.2%	100%	1.220%	0%		Closure approved Nov 02
B-2 Investigation/Report		1.2%	100%	1.220%	0%		Active range
B-22 Investigation/Report		1.2%	100%	1.220%	0%		Closure approved Dec 02
B-24 Investigation/Report		1.2%	100%	1.220%	0%		Active range
B-29 Investigation/Report		1.2%	100%	1.220%	0%		Closure approved Feb 08
AOC 36 Investigation/Report		1.2%	100%	1.220%	0%		Closure approved Aug 02
AOC 41 Investigation/Report		1.2%	100%	1.220%	0%		Closure approved July 05
AOC 42 Investigation/Report		1.2%	100%	1.220%	0%		NFA closure approved Dec 11
AOC 48 Investigation/Report		1.2%	100%	1.220%	0%		Delisting approved Nov 04
AOC 57 Investigation/Report		1.2%	100%	1.220%	0%		NFA closure approved Sept 11
Large Areas (>10 acres in size)							
B-20/21 Investigation/Report		1.2%	100%	1.220%	0%		Active range
AOC 38 Investigation/Report		1.2%	100%	1.220%	0%		Closure approved February 05
AOC 51 Investigation/Report		1.2%	100%	1.220%	0%		NFA Closure approved Oct 12
AOC 66 Investigation/Report		1.2%	100%	1.220%	0%		NFA Closure approved Feb 05
RMU-5 Investigation/Report		1.2%	100%	1.220%	0%		NFA Closure approved Sept 12
AOC 65 Investigation/Report		1.2%	100%	1.220%	0%		Final report submitted, additional work recommended
AOC 69 Investigation/Report		1.2%	100%	1.220%	0%		Closure approved Oct 09
Coal Bins Investigation/Report		1.2%	100%	1.220%	0%		Site de-listed as an AOC
RMU-2 Investigation/Report		1.2%	100%	1.220%	0%		NFA closure approved Feb 12
RMU-3 Investigation/Report		1.2%	100%	1.220%	0%		NFA closure approved May 13
RMU-4 Investigation/Report		1.2%	100%	1.220%	0%		Final report submitted to TCEQ
Groundwater Investigation	15%					99%	
Well Installation		10%	90%	9%	10%		
Groundwater Monitoring 1999		3%	100%	3%	0%		
Groundwater Monitoring 2000		3%	100%	3%	0%		
Groundwater Monitoring 2001		3%	100%	3%	0%		
Groundwater Monitoring 2002		3%	100%	3%	0%		
Groundwater Monitoring 2003		3%	100%	3%	0%		
Groundwater Monitoring 2004		3%	100%	3%	0%		

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
Groundwater Monitoring 2005		3%	100%	3%	0%		
Groundwater Monitoring 2006		3%	100%	3%	0%		
Groundwater Monitoring 2007		3%	100%	3%	0%		
Groundwater Monitoring 2008		3%	100%	3%	0%		
Groundwater Monitoring 2009		3%	100%	3%	0%		
Groundwater Monitoring 2010		3%	100%	3%	0%		
Groundwater Monitoring 2011		3%	100%	3%	0%		
Groundwater Monitoring 2012		3%	100%	3%	0%		
Groundwater Monitoring 2013		3%	100%	3%	0%		
Groundwater Monitoring 2014		3%	100%	3%	0%		
Groundwater Monitoring 2015		3%	100%	3%	0%		
Conceptual Site Model (CSM)		20.0%	100%	20%	0%		
CSM Update		5.0%	100%	5%	0%		
LTMO 2005 (optimization study)		6%	100%	6%	0%		Complete
LTMO 2010 (review of optimization)		6%	100%	6%	0%		Complete
LTMO 2015 (review of optimization)		6%	90%	5%	10%		In progress
Risk Assessment	10%					100%	
Draft Report		20%	100%	20%	0%		
Draft Final Report		4%	100%	4%	0%		
Final Report		1%	100%	1%	0%		RA approved by EPA Apr 14.
Draft CSM		60%	100%	60%	0%		
Update to CSM		10%	100%	10%	0%		
Final CSM		5%	100%	5%	0%		
Investigation Analysis	10%					100%	
Collect Background Data		10%	100%	10%	0%		
Draft Investigation Analysis		85%	100%	85%	0%		
Final Investigation Analysis		5%	100%	5%	0%		Information included in facility investigation reports; percent complete based on overall percent complete of facility investigation tasks.
Treatability Studies	10%					95%	
Draft Treatability Study Report B-20		15%	100%	15%	0%		
Final Treatability Study Report B-20		5%	100%	5%	0%		
Continued O&M for B-3		10%	100%	10%	0%		
AOC-65 Treatability Studies		10%	100%	10%	0%		
Draft Treatability Study & Technology Evaluation Reports		10%	100%	10%	0%		
Final Treatability Study Report		25%	80%	20%	20%		
Recharge Study		25%	100%	25%	0%		
Progress Reports	5%					99%	
Quarter 1 (August 1999)		2.1%	100%	2.1%	0%		
Quarter 2 (November 1999)		2.1%	100%	2.1%	0%		
Quarter 3 (February 2000)		2.1%	100%	2.1%	0%		
Quarter 4 (May 2000)		2.1%	100%	2.1%	0%		
Quarter 5 (August 2000)		2.1%	100%	2.1%	0%		
Quarter 6 (November 2000)		2.1%	100%	2.1%	0%		
Quarter 7 (February 2001)		2.1%	100%	2.1%	0%		
Quarter 8 (May 2001)		2.1%	100%	2.1%	0%		
Quarter 9 (August 2001)		2.1%	100%	2.1%	0%		
Quarter 10 (November 2001)		2.1%	100%	2.1%	0%		
Quarter 11 (February 2002)		2.1%	100%	2.1%	0%		
Quarter 12 (May 2002)		2.1%	100%	2.1%	0%		
Quarter 13 (August 2002)		2.1%	100%	2.1%	0%		
Quarter 14 (November 2002)		2.1%	100%	2.1%	0%		
Quarter 15 (February 2003)		2.1%	100%	2.1%	0%		
Quarter 16 (May 2003)		2.1%	100%	2.1%	0%		
Quarter 17 (August 2003)		2.1%	100%	2.1%	0%		
Quarter 18 (November 2003)		2.1%	100%	2.1%	0%		
Quarter 19 (February 2004)		2.1%	100%	2.1%	0%		
Quarter 20 (May 2004)		2.1%	100%	2.1%	0%		
Quarter 21 (August 2004)		2.1%	100%	2.1%	0%		
Quarter 22 (November 2004)		2.1%	100%	2.1%	0%		
Quarter 23 (February 2005)		2.1%	100%	2.1%	0%		

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
Quarter 24 (May 2005)		2.1%	100%	2.1%	0%		
Quarter 25 (August 2005)		2.1%	100%	2.1%	0%		
Quarter 26 (November 2005)		2.1%	100%	2.1%	0%		
Quarter 27 (February 2006)		2.1%	100%	2.1%	0%		
Quarter 28 (May 2006)		2.1%	100%	2.1%	0%		
Semi-Annual 29 (December 2006)		2.1%	100%	2.1%	0%		
Semi-Annual 30 (June 2007)		2.1%	100%	2.1%	0%		
Semi-Annual 31 (December 2007)		2.1%	100%	2.1%	0%		
Semi-Annual 32 (June 2008)		2.1%	100%	2.1%	0%		
Semi-Annual 33 (December 2008)		2.1%	100%	2.1%	0%		
Semi-Annual 34 (June 2009)		2.1%	100%	2.1%	0%		
Semi-Annual 35 (December 2009)		2.1%	100%	2.1%	0%		
Semi-Annual 36 (June 2010)		2.1%	100%	2.1%	0%		
Semi-Annual 37 (December 2010)		2.1%	100%	2.1%	0%		
Semi-Annual 38 (June 2011)		2.1%	100%	2.1%	0%		
Semi-Annual 39 (December 2011)		2.1%	100%	2.1%	0%		
Semi-Annual 40 (June 2012)		2.1%	100%	2.1%	0%		
Semi-Annual 40 (June 2012)		2.1%	100%	2.1%	0%		
Semi-Annual 41 (December 2012)		2.1%	100%	2.1%	0%		
Semi-Annual 42 (June 2013)		2.1%	100%	2.1%	0%		
Semi-Annual 43 (December 2013)		2.1%	100%	2.1%	0%		
Semi-Annual 44 (June 2014)		2.1%	100%	2.1%	0%		
Semi-Annual 45 (December 2014)		2.1%	100%	2.1%	0%		
Semi-Annual 46 (June 2015)		2.1%	100%	2.1%	0%		
Semi-Annual 47 (December 2015)		2.1%	100%	2.1%	0%		
% of Phase Complete						99.30%	
¹ Breakdown of percent complete for RFI facility investigations: Field work complete (25%), data validation (20%), boring logs (if applicable)(10%), analytical data tables (10%), figures (10%), draft report (20%), final report (5%). Note: if additional investigations are needed, then the percent complete will need to be adjusted on a site by site basis.							

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Task Complete
Identify and Develop Alternatives	15%				100.0%
Update DCC Report		35%	100%	35%	
Establish Corrective Action Objectives		30%	100%	30%	
ID, Screen, Develop CM Alternatives		35%	100%	35%	
Evaluate Alternatives	60%				100.0%
Draft Description of CM Alternative		90%	100%	90%	
Final Description of CM Alternative		10%	100%	10%	
Reports	25%				100.0%
Draft CMS Report		75%	100%	75%	
Final CMS Report		5%	100%	5%	
Quarter 1 Progress Report (Period 44)		5%	100%	5%	
Quarter 2 Progress Report (Period 45)		5%	100%	5%	
Quarter 3 Progress Report (Period 46)		5%	100%	5%	
Quarter 4 Progress Report (Period 47)		5%	100%	5%	
% of Phase Complete					100.0%

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Task Complete
Implementation Program Plan	5%				99%
Draft Program Management Plan		40%	100%	40%	
Final Program Management Plan		10%	95%	10%	
Draft Update to CRP		40%	100%	40%	
Final Update to CRP		10%	95%	10%	
Corrective Measure Design	15%				99%
Draft CMD Report		90%	100%	90%	
Final CMD Report		10%	90%	9%	
Corrective Measure Construction	70%				50%
Draft Construction QAPP		35%	50%	18%	
Final Construction QAPP		5%	50%	3%	
Implementation of Construction QAPP		60%	50%	30%	
Corrective Measures Report	10%				0%
Draft Corrective Measures Report		50%	0%	0%	
Final Corrective Measures Report		50%	0%	0%	
% of Phase Complete					62.00%

ATTACHMENT 4

GROUNDWATER RESULTS SUMMARY

Attachment 4
June 2015 Quarterly On-Post Groundwater Monitoring Analytical Results

Well ID	Sample Date	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Zinc	Mercury
CS-D	6/8/2015	NA	NA	0.0005U	0.001U	NA	0.0019U	NA	0.0001U
CS-4	6/10/2015	NA	NA	0.0005U	0.001U	NA	0.0019U	NA	0.0001U
CS-MW1-LGR	6/8/2015	NA	NA	0.0005U	0.0012F	NA	0.0019U	NA	0.0001U
CS-MW2-LGR	6/8/2015	NA	NA	0.0005U	0.001U	NA	0.0019U	NA	0.0001U
CS-MW8-LGR	6/10/2015	NA	NA	0.0005U	0.001U	NA	0.0019U	NA	0.0001U
CS-MW10-LGR	6/9/2015	NA	NA	0.0005U	0.0013F	NA	0.0019U	NA	0.0001U
CS-MW11A-LGR	6/9/2015	NA	NA	0.0005U	0.001U	NA	0.0019U	NA	0.0001U
CS-MW24-LGR	6/8/2015	NA	NA	0.0005U	0.001U	NA	0.0019U	NA	0.0001U
CS-MW35-LGR	6/9/2015	NA	NA	0.0005U	0.001U	NA	0.0019U	NA	0.0001U
CS-MW36-LGR	6/10/2015	NA	NA	0.0005U	0.001U	NA	0.0019U	NA	0.0001U
CSSA Drinking Water Well System									
CS-1	6/11/2015	0.00167F	0.038	0.0005U	0.001U	0.009F	0.0019U	0.235	0.001U
CS-10	6/15/2015	0.00172F	0.0396	0.0005U	0.0014F	0.008F	0.0019U	0.063	0.001U
CS-10 FD	6/16/2015	0.00135F	0.0379	0.0005U	0.001U	0.008F	0.0019U	0.056	0.001U
CS-12	6/15/2015	0.00199F	0.0298	0.0005U	0.001U	0.006F	0.0019U	0.077	0.001U
CS-13	6/15/2015	0.00294F	0.0304	0.0005U	0.001U	0.004F	0.0019U	0.522	0.001U

Well ID	Sample Date	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	PCE	TCE	Vinyl Chloride
CS-D	6/8/2015	0.12U	22.82	0.08U	23.56	32.24	0.08U
CS-4	6/10/2015	0.12U	0.07U	0.08U	0.57F	0.48F	0.08U
CS-MW1-LGR	6/8/2015	0.12U	46.36	0.81	35.77	36.16	0.08U
CS-MW2-LGR	6/8/2015	0.12U	0.54F	0.08U	0.06U	0.05U	0.08U
CS-MW8-LGR	6/10/2015	0.12U	0.07U	0.08U	2.44	0.05U	0.08U
CS-MW10-LGR	6/9/2015	0.12U	0.07U	0.08U	1.86	0.44F	0.08U
CS-MW11A-LGR	6/9/2015	0.12U	0.07U	0.08U	0.96F	0.05U	0.08U
CS-MW24-LGR	6/8/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW35-LGR	6/9/2015	0.12U	0.07U	0.08U	0.91F	0.05U	0.08U
CS-MW36-LGR	6/10/2015	0.12U	0.07U	0.08U	8.7	6.28	0.08U
CSSA Drinking Water Well System							
CS-1	6/11/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-10	6/15/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-10 FD	6/15/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-12	6/15/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-13	6/15/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U

BOLD	≥ MDL
BOLD	≥ RL
BOLD	≥ MCL

All samples were analyzed by APPL, Inc.
VOC data reported in ug/L & metals data reported in mg/L.

Abbreviations/Notes:
FD Field Duplicate
TCE Trichloroethene
PCE Tetrachloroethene
DCE Dichloroethene
AL Action Level
SS Secondary Standard
NA Not Analyzed for this parameter

Data Qualifiers:
U-The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
F-The analyte was positively identified but the associated numerical value is below the RL.

**Attachment 4
June 2015 Off-Post Groundwater Results**

Well ID	Sample Date	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	PCE	TCE	Vinyl Chloride
JW-12	6/3/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-5	6/1/2015	0.12U	0.07U	0.08U	1.22F	2.72	0.08U
LS-6	6/1/2015	0.12U	0.07U	0.08U	0.29F	0.05U	0.08U
LS-7	6/1/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
OFR-3	6/1/2015	0.12U	0.07U	0.08U	4.19	2.59	0.08U
OW-BARNOWL	6/3/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
OW-HH2	6/3/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
RFR-10	6/1/2015	0.12U	0.13F	0.08U	9.19	5.53	0.08U
RFR-11	6/1/2015	0.12U	0.07U	0.08U	0.93F	0.05U	0.08U
SLD-01	6/3/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
SLD-01 FD	6/3/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
Laboratory Detection Limits & Maximum Contaminant Level							
Method Detection Limit (MDL)		0.12	0.07	0.08	0.06	0.05	0.08
Reporting Limit (RL)		1.2	1.2	0.6	1.4	1	1.1
Max. Contaminant Level (MCL)		7	70	100	5	5	2

BOLD	≥ MDL
BOLD	≥ RL
BOLD	≥ MCL

All samples were analyzed by APPL, Inc.
VOC data reported in ug/L.

Abbreviations/Notes:

FD Field Duplicate
TCE Trichloroethene
PCE Tetrachloroethene
DCE Dichloroethene

Data Qualifiers:

--The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

F-The analyte was positively identified but the associated numerical value is below the RL.

Attachment 4
Quarterly On-Post Groundwater Monitoring Analytical Results, September 2015

Well ID	Sample Date	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Zinc	Mercury
CS-MW36-LGR	9/11/2015	NA	NA	0.0005U	0.0126	NA	0.0019U	NA	0.0001U
CSSA Drinking Water Well System									
CS-1	9/15/2015	0.0008F	0.0324	0.0005U	0.0010U	0.003U	0.0019U	0.148	0.0001U
CS-10	9/15/2015	0.0008F	0.037	0.0005U	0.0010U	0.005F	0.0019U	0.062	0.0001U
CS-12	9/15/2015	0.0002U	0.0282	0.0005U	0.0010U	0.096	0.0019U	0.126	0.0001U
CS-13	9/14/2015	0.0058F	0.0272	0.0005U	0.0011F	0.013	0.0019U	0.232	0.0001U
CS-13 FD	9/14/2015	0.0044F	0.0274	0.0005U	0.0011F	0.009F	0.0019U	0.242	0.0001U

Well ID	Sample Date	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	PCE	TCE	Vinyl Chloride
CS-MW36-LGR	9/11/2015	0.12U	0.36F	0.08U	13.21	12.01	0.08U
CSSA Drinking Water Well System							
CS-1	9/15/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-10	9/15/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-12	9/15/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-13	9/14/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-13 FD	9/14/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U

BOLD	≥ MDL
BOLD	≥ RL
BOLD	≥ MCL

All samples were analyzed by APPL, Inc.
VOC data reported in ug/L & metals data reported in mg/L.
Abbreviations/Notes:
FD Field Duplicate
TCE Trichloroethene
PCE Tetrachloroethene
DCE Dichloroethene
AL Action Level
SS Secondary Standard
NA Not Analyzed for this parameter
Data Qualifiers:
U-The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
F-The analyte was positively identified but the associated numerical value is below the RL.

Attachment 4
September 2015 Quarterly Off-post Groundwater Analytical Results

Well ID	Sample Date	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	PCE	TCE	Vinyl Chloride
LS-5	9/8/2015	0.12U	0.07U	0.08U	0.83F	2.43	0.08U
LS-5-A2	9/8/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-6	9/8/2015	0.12U	0.07U	0.08U	0.62F	2.04	0.08U
LS-6-A2	9/8/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-7	9/8/2015	0.12U	0.07U	0.08U	1.26F	0.05U	0.08U
LS-7-A2	9/8/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
OFR-3	9/8/2015	0.12U	0.07U	0.08U	6.88	3.64	0.08U
OFR-3-A2	9/8/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
RFR-10	9/8/2015	0.12U	0.07U	0.08U	19.71	7.93	0.08U
RFR-10-A2	9/8/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
RFR-10-B2	9/8/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
RFR-11	9/8/2015	0.12U	0.07U	0.08U	0.84F	1.71	0.08U
RFR-11 FD	9/8/2015	0.12U	0.07U	0.08U	0.71F	1.58	0.08U
RFR-11-A2	9/8/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
SLD-01	9/14/2015	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U

BOLD	≥ MDL
BOLD	≥ RL
BOLD	≥ MCL

All samples were analyzed by APPL, Inc.
VOC data reported in ug/L.

Abbreviations/Notes:

FD Field Duplicate
TCE Trichloroethene
PCE Tetrachloroethene
DCE Dichloroethene

Data Qualifiers:

U-The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
F-The analyte was positively identified but the associated numerical value is below the RL.

Attachment 4
Quarterly Westbay Analytical Results, September 2015

Well ID	Date Sampled	1,1-DCE (1,1-dichloroethene)	cis-1,2-DCE (cis-1,2-dichloroethene)	TCE (trichloroethene)	PCE (tetrachloroethene)	trans-1,2-DCE (trans-1,2-dichloroethene)	Vinyl Chloride
CS-WB01-LGR-01	9/16/2015	<0.12	<0.07	0.26F	1.30F	<0.08	<0.08
CS-WB01-LGR-02	9/16/2015	<0.12	<0.07	2.26	11.09	<0.08	<0.08
CS-WB01-LGR-03	9/16/2015	<0.12	<0.07	8.37	2.87	<0.08	<0.08
CS-WB01-LGR-04	9/16/2015	<0.12	0.61F	<0.05	<0.06	<0.08	<0.08
CS-WB01-LGR-05	9/16/2015	<0.12	0.24F	0.88F	<0.06	<0.08	<0.08
CS-WB01-LGR-06	9/16/2015	<0.12	0.92F	1.58	<0.06	<0.08	<0.08
CS-WB01-LGR-07	9/16/2015	<0.12	5.23	13.68	14.83	<0.08	<0.08
CS-WB01-LGR-08	9/16/2015	<0.12	8.57	7.86	0.68F	0.31F	<0.08
CS-WB01-LGR-09	9/16/2015	<0.12	0.60F	14.37	12.41	<0.08	<0.08
CS-WB02-LGR-03	9/23/2015	<0.12	<0.07	0.26F	2.47	<0.08	<0.08
CS-WB02-LGR-04	9/23/2015	<0.12	<0.07	5.74	3.38	<0.08	<0.08
CS-WB02-LGR-05	9/23/2015	<0.12	0.17F	1.84	0.79F	<0.08	<0.08
CS-WB02-LGR-06	9/23/2015	<0.12	0.43F	2.39	4.61	0.23F	<0.08
CS-WB02-LGR-07	9/23/2015	<0.12	0.29F	1.22	0.34F	<0.08	<0.08
CS-WB02-LGR-08	9/23/2015	<0.12	2.45	0.54F	<0.06	0.39F	<0.08
CS-WB02-LGR-09	9/23/2015	<0.12	0.20F	7.31	9.43	<0.08	<0.08
CS-WB03-UGR-01	9/21/2015	<12.0**	21.70F**	216.25**	23737.01***	<8.0**	<8.0**
CS-WB03-LGR-01	9/21/2015	<0.12	0.85F	26.33	621.09*	<0.08	<0.08
CS-WB03-LGR-03	9/21/2015	<0.12	<0.07	1.96	7.28	<0.08	<0.08
CS-WB03-LGR-04	9/21/2015	<0.12	<0.07	5.67	18.61	<0.08	<0.08
CS-WB03-LGR-05	9/21/2015	<0.12	<0.07	2.44	16.74	<0.08	<0.08
CS-WB03-LGR-06	9/21/2015	<0.12	5.53	<0.05	<0.06	<0.08	<0.08
CS-WB03-LGR-07	9/21/2015	<0.12	2.6	5.43	1.71	<0.08	<0.08
CS-WB03-LGR-08	9/21/2015	<0.12	2.4	0.39F	<0.06	<0.08	<0.08
CS-WB03-LGR-09	9/17/2015	<0.12	0.49F	4.39	4.61	<0.08	<0.08
CS-WB04-LGR-01	9/22/2015	<0.12	<0.07	<0.05	1.67	<0.08	<0.08
CS-WB04-LGR-03	9/22/2015	<0.12	<0.07	<0.05	0.34F	<0.08	<0.08
CS-WB04-LGR-04	9/22/2015	<0.12	0.27F	0.16F	0.40F	<0.08	<0.08
CS-WB04-LGR-06	9/22/2015	<0.12	5.1	12.09	16.68	0.25F	<0.08
CS-WB04-LGR-07	9/22/2015	<0.12	35.47	13.03	2.01	0.25F	<0.08
CS-WB04-LGR-08	9/22/2015	<0.12	0.47F	0.75F	0.82F	<0.08	<0.08
CS-WB04-LGR-09	9/22/2015	<0.12	<0.07	6.33	10.03	<0.08	<0.08
CS-WB04-LGR-10	9/22/2015	<0.12	<0.07	0.59F	2.2	<0.08	<0.08
CS-WB04-LGR-11	9/22/2015	<0.12	<0.07	<0.05	1.5	<0.08	<0.08
CS-WB04-BS-01	9/22/2015	<0.12	<0.07	<0.05	0.46F	<0.08	<0.08
CS-WB04-BS-02	9/22/2015	<0.12	<0.07	<0.05	0.94F	<0.08	<0.08
CS-WB04-CC-01	9/22/2015	<0.12	1.02F	<0.05	0.84F	<0.08	<0.08
CS-WB04-CC-02	9/22/2015	<0.12	0.21F	<0.05	1.29F	<0.08	<0.08
CS-WB04-CC-03	9/22/2015	<0.12	0.17F	<0.05	6.66	<0.08	<0.08

Data Qualifiers

F-The analyte was positively identified but the associated numerical value is below the RL.

* The analyte was run at a dilution of 10.

** The analyte was run at a dilution of 100.

*** The analyte was run at a dilution of 500.

All values are reported in µg/L.

BOLD	≥ MDL
BOLD	≥ RL
BOLD	≥ MCL