

FINAL REMEDIATION PLAN – REVISION 1 SANTA FE COUNTY JUDICIAL COMPLEX 327 SANDOVAL STREET SANTA FE, NEW MEXICO

PSTB FACILITY #: 53763 RELEASE ID #: 4597 WPID #: 4071 DELIVERABLE ID #: 4071-2 CONTRACT #: 19-667-3200-0007

Submitted to:

New Mexico Environment Department Petroleum Storage Tank Bureau 2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505

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Signed Electronically by V. Mustafin on December 1, 2020

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1.0 INTRODUCTION

1.1. Contractual

EA Engineering, Science, and Technology, Inc. PBC (EA) has prepared this Final Remediation Plan (FRP) to implement injection of PetroFix™ to address groundwater contamination at the Santa Fe County Judicial Complex (SFCJC) State Lead Site in Santa Fe, New Mexico. The site layout is shown on Drawing G-1. The FRP has been prepared under Contract number 19-667-3200-0007 and in accordance with the New Mexico Petroleum Storage Tank Regulations, New Mexico Administrative Code (NMAC) 20.5.119.1923, and work plan identification (WPID) number 4071, approved by the New Mexico Environment Department (NMED) Petroleum Storage Tank Bureau (PSTB) on June 27, 2019.

1.2. Site Setting

The site is a consolidation of several underground storage tank (UST) sites and other potential sources defined by Sandoval Street to the west, West de Vargas Street to the north, Galisteo Street to the east, and Montezuma Avenue to the south. For the purpose of this FRP, the site consists of four groundwater plumes, or "hotspots," listed below:

- De Vargas plume in the northern portion of the site
- SFCJC plume in the central portion of the site
- Design Center plume in the south-west portion of the site
- Capital 66 plume in the south-east portion of the site

The SFCJC, the District Attorney Building, Design Center, hotel, offices, and retail buildings are located within the area of the site.

1.3. Previous Corrective Actions

Since 2009, several corrective actions have been performed at the site:

- Thermally enhanced soil vapor extraction (SVE),
- Ozone injection
- Chemical oxidation using hydrogen peroxide
- Mobile dual-phase extraction (MDPE) followed by installation of Regenesis Oxygen Releasing Compound-Advanced (ORC-A) socks

A summary of the salient historical events that have occurred at the site are provided below:

• Between 2003 and 2009, Phase 1 and 2 corrective action activities were performed at the 210 & 218 Montezuma Avenue UST site (Montezuma Avenue) under contract to the

responsible party.

- In 2009, the Montezuma Avenue site was included in a State Lead remediation procurement that included the Former Capital 66 UST site (Capital 66), the SFCJC, and surrounding properties. The site was collectively referred to as the SFCJC.
- In 2009, following award of the State Lead contract, three separate phases of SVE system operation were implemented at the site.
- Between November 2012 and November 2013, SVE-1, SVE-3, SVE-4, and SVE-6 were used for ozone sparging to address elevated dissolved-phase contaminant concentrations.
- In February 2015, the ozone sparge equipment was dismantled.
- Between September 2013 and May 2014, five hydrogen peroxide injection events were conducted.
- In October 2017, three 48-hour MDPE events were conducted. MDPE was focused on dissolved-phase "hot spots" in the vicinity of the Design Center (using MW-1R, MW-4R, and TWS-4 as extraction wells), Montezuma Avenue (using SFCMW-01, SFCMW-10, MW-6, and SVE-3 as extraction wells), and the West De Vargas Condominiums (using MW-11, MW-14, TWN-2 and TWN-3 as extraction wells). Results showed generally low petroleum concentrations in soil vapor of 11 to 42 micrograms per liter (μg/L) total petroleum hydrocarbons gasoline-range organics (TPH-GRO) and that soil was clean. A total of approximately 17,000 gallons of petroleum-contaminated groundwater were extracted and disposed during the MDPE events.
- In October 2017, after completion of the MDPE events, ORC-A socks were installed in each of the MDPE wells, except the two Santa Fe County wells (SFCMW-01 and SFCMW10). Wells SVE-1 and SVE-5 had socks installed as substitutes for the Santa Fe County wells.
- Groundwater monitoring has been ongoing at the SFCJC State Lead Site, as a whole, since 2009. Investigation and groundwater monitoring activities were conducted prior to 2009 at individual sites that were later rolled into the SFCJC State Lead Site, such as Montezuma Avenue and Capital 66.

1.4. Site Geology and Hydrogeology

The site is underlain by Quaternary Alluvium, which is comprised of brown, poorly sorted, weakly cemented, sand and gravel that unconformably overlies the Nambe Member in the Tesuque Formation of the Santa Fe Group. The Tesuque Formation consists of pinkish red, weakly cemented, silty sand/clayey sand, and fine-grained sand (see Drawing G-2).

The Tesuque Formation Aquifer serves as the City of Santa Fe's principal source of groundwater. Shallow groundwater in the Santa Fe area occurs either at or within 20 feet of the contact between the Quaternary alluvium and Tesuque Formation sediments. This shallow groundwater is locally controlled by buried channels, faults, and higher permeability zones at the top of the Tesuque Formation. The shallow aquifer has very low productivity and an estimated hydraulic conductivity of 0.2 to 0.4 ft/day. The shallow groundwater is vulnerable to contamination by near-surface sources, most commonly by leaking USTs. Groundwater flow velocities and maximum solute transport rates in the aquifer range from 0.015 to 0.09 ft/day (5.5 to 33 ft/year). At locations where a strong vertical gradient exists, the shallow, contaminated groundwater may migrate vertically through high-permeability faults, fractures, and bedding planes to deeper portions of the Tesuque Formation aquifer.

Groundwater is present at the site at depths ranging from approximately 23 feet to 34 feet below ground surface (bgs). Groundwater depths differ on either side of Cerrillos Road. To the west of Cerrillos Road, depth to groundwater is roughly 10 feet deeper than on the east side with a relatively shallow gradient on the order of 0.001 foot per foot compared to the gradient on the east side of Cerrillos Road which is approximately 0.03 foot per foot. The predominant groundwater flow direction is to the north-northwest at the site. Groundwater flow is restricted from east to west by a subsurface discontinuity, which is believed to be a fault based on published reports (Spiegel and Baldwin, 1963). A historical summary of fluid level measurements is provided in Table 1; groundwater surface contours are shown on Drawing G-3.

2.0 CONTAMINANT DISTRIBUTION

The primary contaminants of concern (COCs) at the site are petroleum hydrocarbons including benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tertiary-butyl ether (MTBE), ethylene dibromide (EDB), ethylene dichloride (EDC), and total naphthalenes. MTBE has not been detected in groundwater since 2014. Historically, contamination has existed in a narrow north-south corridor between Sandoval Street to the west and Galisteo Street to the east. Contamination is believed to have been conveyed through the more conductive, poorly sorted sands of a paleo-channel, as opposed to tighter, well-sorted silty sands and gravels located outside of the known extent of contamination.

2.1. Distribution of Contaminants in Soil

Historically, soil contamination represented by photoionization detector (PID) headspace readings in excess of 100 parts per million by volume (ppmv) was encountered at depths of approximately 25 to 35 feet bgs, or within 5 feet of the water table interface. During 2014 site investigations, field screening and laboratory analytical results for soil samples collected below the water table showed that residual contamination is typically present at depths of 35 to 45 feet bgs or 5 to 15 feet below the water table interface (Drawing G-2).

The low TPH GRO concentrations in soil gas generated during the three MDPE events conducted in October 2017 suggest that the majority of vadose zone contamination has been remediated by the multiple phases of SVE system operation at the site. Based on the dissolved-phase contaminant concentrations within the areas of remaining groundwater contamination at the site, it is apparent that residual soil contamination remains below the water table in these areas.

The current position of submerged contamination, as well as dissolved-phase impacts, are attributable to the historical events that occurred in the area. Groundwater pumping for public water supply affected groundwater levels at one point in time, creating a lower water table and variable direction of groundwater flow. Leaking USTs at the Capital 66 and Montezuma Avenue sites, and attendant plume positions, reflect these historic groundwater dynamics. The construction dewatering and attendant water table drop affected the direction and thickness of impact to a lesser degree, since UST leaking was no longer active. As a result, the plume position and plume thickness in the southern portion of the site near the Design Center does not agree with the current groundwater flow direction. However, an understanding that groundwater dynamics have changed over time explains this incongruity.

As mentioned above, previous investigations at the site have shown that residual soil contamination is typically present at depths of 35 to 45 feet bgs or 5 to 15 feet below the water; however, in the vicinity of the Design Center, contamination extends to a greater depth. Review of logs from soil borings and monitoring wells installed in the area during previous investigations did not afford establishment of the vertical extent of residual soil contamination below the water table. To evaluate the vertical extent of contamination, in March 2020, EA advanced three soil borings (SB-1 through SB-3) to 90 feet bgs, 80 feet bgs, and 95 feet bgs, respectively using a CME-85 hollow stem auger drilling rig in the Design Center plume (Drawing G-1, EA April 2020). Results of PID field screening were used to determine the treatment interval in the area.

2.2. Nonaqueous-Phase Liquid (NAPL)

Measurable NAPL was last observed at the site in June 2013 in well CMW-3R at a thickness of 0.06 foot. COC concentrations have significantly decreased in wells that previously contained NAPL.

2.3. Distribution of Contaminants in Water

The most recent groundwater monitoring event was conducted in September 2019. During the event, benzene, EDB, EDC, and total naphthalenes were above the standards. Results are presented in Drawing G-4, Table 2. In addition, results for dissolved metals, anions, and methane are shown on Drawing G-5, Table 3. A summary of geochemical indicators in groundwater is presented in Table 4.

The results of groundwater monitoring indicate that four recalcitrant groundwater areas, or "hotspots," remain at the site (Drawing G-4):

- The area of the Former Capital 66 (hereafter referred to as the Capital 66 plume),
- The area east and southeast of the SFCJC parking garage (hereafter referred to as the SFCJC plume),
- The area south of 210 & 218 Montezuma Avenue and between the Attorney General Complex and the Design Center (hereafter referred to as the Design Center plume), and
- The area of the west De Vargas Condominium Association parking lot north of the SFCJC and the District Attorney building (hereafter referred to as the De Vargas plume).

To address a data gaps, EA completed benzene plume delineation east of the Former Capital 66 in March 2020. Concentrations of dissolved-phase COCs in the area were historically low, except for benzene in well CMW-1, the extent of which had not been sufficiently defined to the northeast,

east, or southeast of CMW-1 during previous investigations. During the investigation, a Geoprobe® rig was used to advance 2.25-inch drive rod to approximately five feet below the water table at eight locations on the east side of the Former Capital 66. Temporary wells were installed, and filtered grab samples were collected and analyzed for COCs (EA, April 2020). Results indicated that concentrations of COCs were below the detection levels and/or regulatory limits (Table 5).

3.0 REMEDIATION GOALS

Remediation goals for groundwater will be based on NMAC 20.6.2.3103 standards, as follows:

•	Benzene	5 μg/L
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• Toluene
$$1,000 \mu g/L$$

• EDC 5 μg/L

4.0 REMEDIATION DESIGN

4.1. Technical Approach

Previous corrective action activities completed at the site have resulted in elimination of measurable NAPL and vadose zone soil contamination; therefore, the vadose zone is considered remediated and not addressed in this FRP.

Previous corrective actions at the site resulted in substantial decreased COC concentrations in groundwater; however, areas of elevated COCs remain. Therefore, this FRP will address the residual groundwater contamination, or "hot spots," within these areas.

Regenesis PetroFixTM amendment will be injected to mitigate elevated groundwater concentrations. PetroFixTM is a water-based suspension of micron-scale (1-2μm) activated carbon and electron acceptors (slow and quick-release nutrients). As PetroFixTM distributes in the subsurface, it coats the soils with micron-scale activated carbon. Petroleum hydrocarbons rapidly sorb to the activated carbon, removing them from the groundwater. Electron acceptors in the PetroFixTM enhance natural biological degradation of the sorbed contamination. Biological degradation rejuvenates sorption sites to allow further influx sorption, providing a long-term treatment.

4.2. Design Elements

Target Areas and Contaminant Concentrations

Target areas for groundwater remediation were based on results of the September 2019 groundwater sampling event and are represented by the exceeding COCs concentrations (Drawing G-4).

In the Design Center plume, for practicality and cost considerations, only areas within the estimated influence of the injection in the median and sidewalk of Cerrillos Road and the alley on the north side of the Design Center were considered. Natural attenuation will be relied upon within Cerrillos Road. The design injection will function as permeable barriers as well as grid application.

To arrive with the design contaminant concentrations, exceeding 2018-2019 concentrations were averaged and used as input for PetroFixTM dosage calculations. Total Petroleum Hydrocarbon – Gasoline Range concentrations were estimated to be two times the sum of benzene, toluene, ethylbenzene, xylenes, and naphthalenes concentrations (Appendix A).

Target Vertical Interval

The vertical extent was based on the existing soil boring PID concentrations. Considering that most borings were drilled several years ago, these PID concentrations have likely decreased; therefore, professional judgement was also used to constrain the target vertical interval. At the De Vargas, SFCJC, and Capital 66 plumes, the target zone extended from the top of water table down to the zone with actionable PID concentrations of between approximately 100 and 200 ppmv. At the Design Center, due to substantial vertical extent, the criterion of 500 ppmv by PID was used as the cutoff. The following are the target depths at each plume:

- De Vargas Plume from 25 feet bgs to 40 feet bgs
- SFCJC Plume from 28 feet bgs to 40 feet bgs
- Capital 66 Plume from 20 feet bgs to 25-35 feet bgs
- Design Center Plume from 32 feet bgs to 62 feet bgs

Drilling and Injection

The drilling methodology was based on the results of the 2020 exploratory drilling (EA, April 2020)

- A 3.5-inch diameter solid stem auger will be used to advance the borehole to the target depth.
- A 5-6 foot long injection tool isolated by packers will be used to inject the amendments using a bottom-up approach to minimize borehole collapse during injection. Field adjustment will be made based on field conditions, as necessary.
- Materials will be carefully measured, batched, and thoroughly mixed prior to injection. Appendix A provides mix details.
- Breakthrough pressures will be established at the beginning of the injection in each of the
 plume areas and will be adjusted accordingly during injection. The injection pressure and
 flowrate will be monitored and adjusted as necessary to optimize the injection and
 subsurface distribution of the remediation fluids, as well as minimize surfacing.
- Preliminary, injection pressures are expected to be in the range of 50 to 100 pounds per square inch (psi) but may be adjusted based on field conditions. The anticipated flowrate is between 2 and 5 gallons per minute (gpm) but will depend on the localized lithology and field conditions.

- Injection pumps will have sufficient pressure and flowrate specifications to optimize and adjust the injection based on field conditions.
- Injection lines will be equipped with control valves, pressure gauges, and flowmeters. Materials will be carefully measured, batched, and thoroughly mixed prior to injection.
- Preliminarily, approximately 76,510 pounds of PetroFixTM, diluted with 218,656 gallons of water, and 3,826 pounds of electron acceptor will be injected. A summary of the PetroFixTM application is presented in Appendix A.
- To verify subsurface distribution, boreholes will be drilled between injection points at a rate of up to 10 percent. A pencil bailer will then be lowered, and a sample will be collected to check for Petro Fix, which yields a black return. As needed, injection spacing may be tightened to ensure distribution. It should be noted that Petro Fix will advect with groundwater for several weeks, thereby increasing the coverage. The cost estimate provided was based on the spacing presented in the FRP. Dense soil and stiffness resulted in a modified injection methodology; therefore, any change in spacing is likely to impact cost.
- Upon completion, the boreholes will be properly plugged using either neat cement, cement-bentonite grout, or bentonite, all of which are acceptable means of borehole abandonment. A plugging plan will be filed with the New Mexico Office of the State Engineer (NMOSE) to facilitate borehole abandonment.
- Soil cuttings will be placed in appropriately labeled drums or roll-off bins pending profiling and disposal. The soil will be disposed of at a permitted facility, either at the Gandy Marley disposal facility west of Tatum, New Mexico or the Rhino Environmental Services landfarm DP-1051 located 1.7 miles north of the New Mexico/Texas state line on Highway 54 in Otero County, New Mexico.
- Detailed logs of each batch and each injection will be maintained. An example field form is provided in the Appendix B.
- Activities will be performed in accordance with the Health and Safety Plan presented in Appendix C.

Borehole Spacing

The borehole spacing varies between approximately 10 foot on-center (o.c.) and 15 foot o.c. depending on the plume configuration and site layout (Appendix D). A tighter spacing was utilized at De Vargas and Capital 66 due to smaller and narrower plume configurations. At the

SFCJC and Design Center, a 15 foot o.c. spacing was used due to a vastly wider treatment area.

Remediation Amendments

Regenesis PetroFixTM is the selected remediation amendment for the SFCJC. PetroFixTM is designed to provide immediate and long-lasting results by adsorbing contaminants onto activated carbon that is injected into the subsurface and providing electron acceptors to enhance in-situ degradation of contaminants. Manufacturer data sheets are provided in the Appendix E. Application rates were calculated using the Regenesis PetroFixTM design application (Appendix A). Impacted areas, impacted thicknesses, and contaminant concentrations were used to arrive with the dosage.

PetroFixTM will be augmented with alternative electron acceptors to enhance in-situ biodegradation of COCs as discussed below:

- In the De Vargas and Capital 66 plumes, a mix of potassium and ammonium sulfate will be utilized, as nitrate concentrations in these areas were elevated in some wells and relative concentrations of COCs are low.
- In the SFCJC and Design Center plumes, a mix of standard sodium nitrate and ammonium sulfate will be added. In these areas, nitrate was utilized during the Microcosm study and relative concentrations of COCs are high.
- Amendments will be mixed at a standard Regenesis ratio of 0.05 pounds of amendment mixture per 1 pound of PetroFixTM.

Biostimulation for degradation of EDB and EDC will not be utilized, as concentrations of EDB and EDC are too low to support biostimulation, and biostimulation did not produce conclusive results during the Microcosm study. Instead, adsorption, and natural reductive dechlorination will be relied upon to remediate low levels of the constituents.

Voluntary Remediation Program (VRP) Compliance Wells

Voluntary Remediation Program (VRP) compliance wells SFCMW-1, SFCMW-2, SFCMW-3, SFCMW-7, SFCMW-10 are located within the area of injection. If any of these wells become impacted as a result of PetroFix injection, EA will consult with the NMED PSTB to evaluate whether one or more of the impacted wells need to be replaced.

4.3. Coordination, Access, Permits, Meetings, PSTB Notice

Corrective action at the site will require coordination with the NMED PSTB, Santa Fe County and its subcontractors, the Old Santa Fe Inn and Barker Realty, the Santa Fe County District Attorney, owners and tenants at the West De Vargas Condominium Complex, the owner of the

Former Capital 66 property, and owners and tenants of the Design Center.

Updated access agreements will be obtained from each property owner where corrective action activities have been conducted and are anticipated to be ongoing. Right-of-entry for injections, laydown, and mixing from all impacted parties will be required. EA has already obtained a number of the required access agreements and forwarded them on to the NMED PSTB project manager. The remaining access agreements will be obtained prior to implementation of field activities and forwarded to the project manager.

Both the locations and number of amendment injection points for treating the four "hot spots" will require an off-hour work schedule. EA anticipates completing most of the amendment injection at night or on the weekend. Amendment injection in Montezuma Avenue and Cerrillos Road will require work to be performed exclusively at night due to the volume of traffic during the day. Other locations, such as the West De Vargas parking lot or the Saveur Bistro Restaurant (former Capital 66), might be accessible on one or both days of the weekend. EA will meet individually with property/business owners to determine the most appropriate time to perform the injections to limit disruptions to businesses.

Additionally, batch mixing can be performed away from the injection points, if necessary. High pressure hoses can be used to distribute amendment to the injection points from hundreds of feet away if required. This will allow for the separation of process and batch mixing areas from injection areas, an important feature in that many injection points are in heavy trafficked areas that will need to be accessed during off business hours or at night.

A robust traffic control plan will be developed to protect workers during amendment injection activities in the streets. Areas where injection activities are being performed will be appropriately barricaded and/or flagged to prevent unauthorized entry by the public.

The following permits will be required to complete the proposed remedial activities:

- A Class V Injection Well Permit will be obtained from the NMED Ground Water Quality Bureau (GWQB) for the amendment injection. A copy of the permit application is provided in Appendix F.
- During the implementation phase and before injecting, the selected New Mexico licensed driller will obtain well permit(s) from the New Mexico Office of State Engineer (OSE) for the injection borings.
- Construction permits and right-of-way (ROW) and excavation permits (which includes traffic control plans [TCPs]) will be obtained from the City of Santa Fe. Requests will be

made to the City of Santa Fe Parking Division to hood meters if present within the working area. These permits will be obtained under the implementation work plan.

All access agreements, traffic control plans and necessary permits, such as the City of Santa Fe construction permits, ROW and excavation permits, GWQB UIC discharge permit, NMOSE well permits, etc. will be submitted to PSTB prior to commencement of field work associated with amendment injections.

Injection points located on Santa Fe County, Old Santa Fe Inn, Saveur Bistro (Former Capital 66), Design Center, 210 & 218 Montezuma Avenue, and West De Vargas Condominium properties will require meetings with appropriate representatives to discuss injection activities and secure access for completing the proposed activities.

A 96-hour notice will be given to the NMED PSTB and impacted property owners prior to initiating material activities.

4.4. Public Notice

As part of this FRP preparation, EA has submitted a public notice in accordance with 20.5.119.1923.D.10 NMAC. The public notice in both English and Spanish will be published twice in the Santa Fe New Mexican, a publication of general circulation in Santa Fe, and posted onsite and at the Santa Fe public library. Certified copies of the notice will be mailed to the adjacent properties. EA will provide affidavits of publishing to the NMED PSTB project manager. A copy of the notice is provided in Appendix G.

5.0 OPERATION, MAINTENANCE, AND MONITORING

To evaluate post-injection remediation progress and effectiveness, groundwater monitoring will be conducted. Concentrations of COCs, electron acceptors, microbial analysis, geochemical indicators, and groundwater levels will be assessed. A summary of the post-injection monitoring is presented in Table 6.

Annually, an evaluation of remediation will be conducted in accordance with NMAC 20.5.119.1927. At that time, the effectiveness of remediation will be assessed, and recommendations regarding additional spot-treatments will be offered using the acquired data.

6.0 SCHEDULE FOR IMPLEMENTATION

The implementation schedule for the FRP is provided in Appendix H.

6.1. Implementation

The implementation of the FRP will include obtaining access, permits, coordination with numerous involved parties, mobilization, traffic plan and controls, injection of the remediation amendments, site cleanup and demobilization, and preparation of the As-Built Report. These activities will be followed by a year of groundwater monitoring.

6.2. Final Site Inspection

Upon completion of the injections, a final site inspection will be performed by all involved parties and the NMED PSTB project manager to ensure the site has been adequately restored. Any deficiencies observed during the site inspection will be noted and corrected.

6.3. As-Built Report

After the injections are complete, EA will prepare an As-Built report to document the implementation of the FRP. The report will be prepared by or under the direct supervision of and sealed by Vener Mustafin, PE. The report will provide details of the injections and the mass and volume injected. The As-Built report will meet the applicable requirements of 20.5.12.119.1925.D NMAC.

7.0 ANNUAL EVALUATION OF REMEDIATION

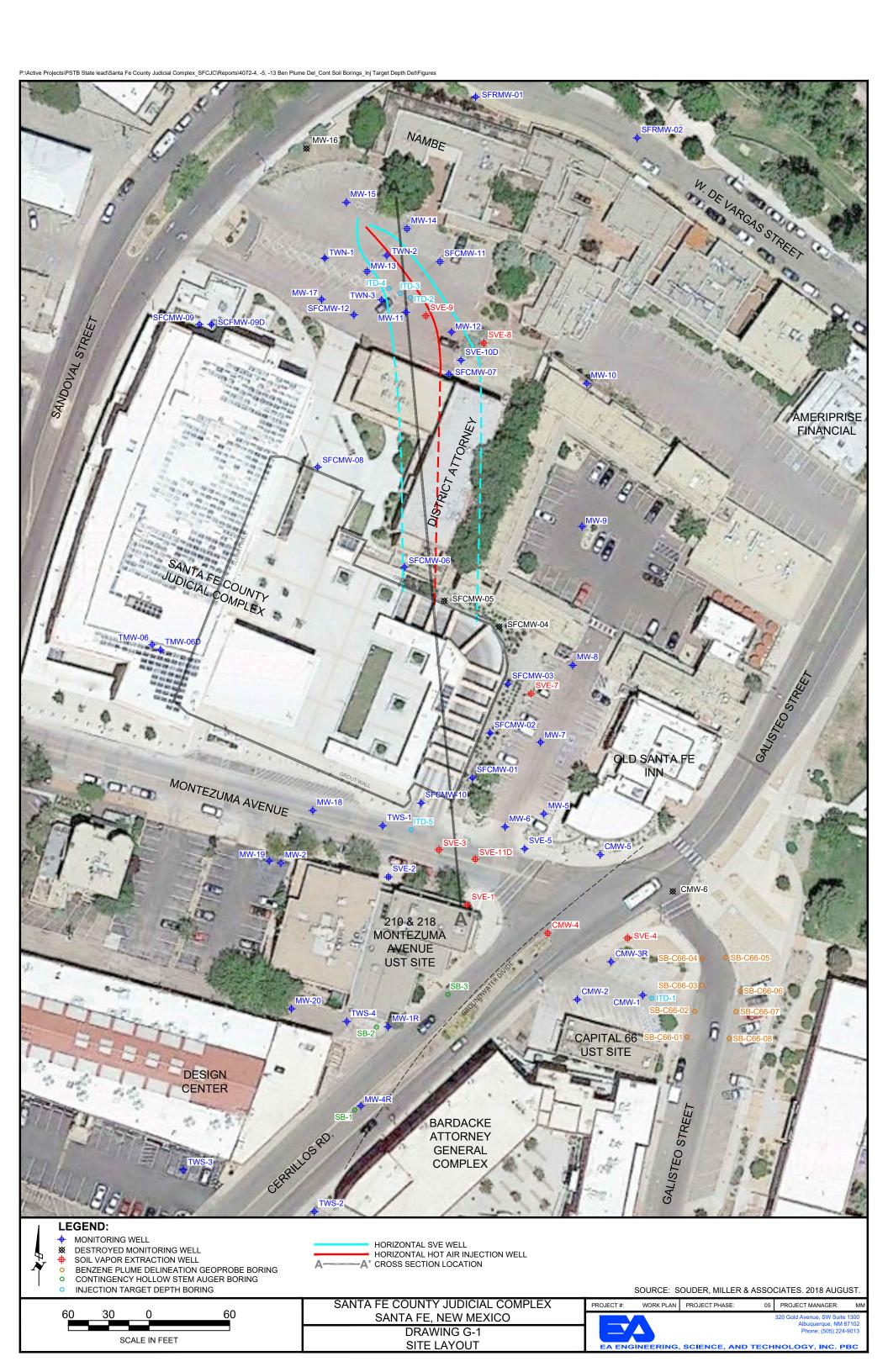
In accordance with 20.5.12.119.1927 NMAC, the effectiveness of the injection will be evaluated at the end of the first year of O&M. The evaluation will contain an analysis of the trend of contaminant concentrations in groundwater, project trends for contaminant concentration decline, an evaluation of the effectiveness of the remediation based on contaminant concentration trends, an estimated time to achieve remediation goals, and recommendations for remediation enhancements. Optimization of remediation and contingency measures that may be triggered by the annual evaluation of remediation are shown in Table 7.

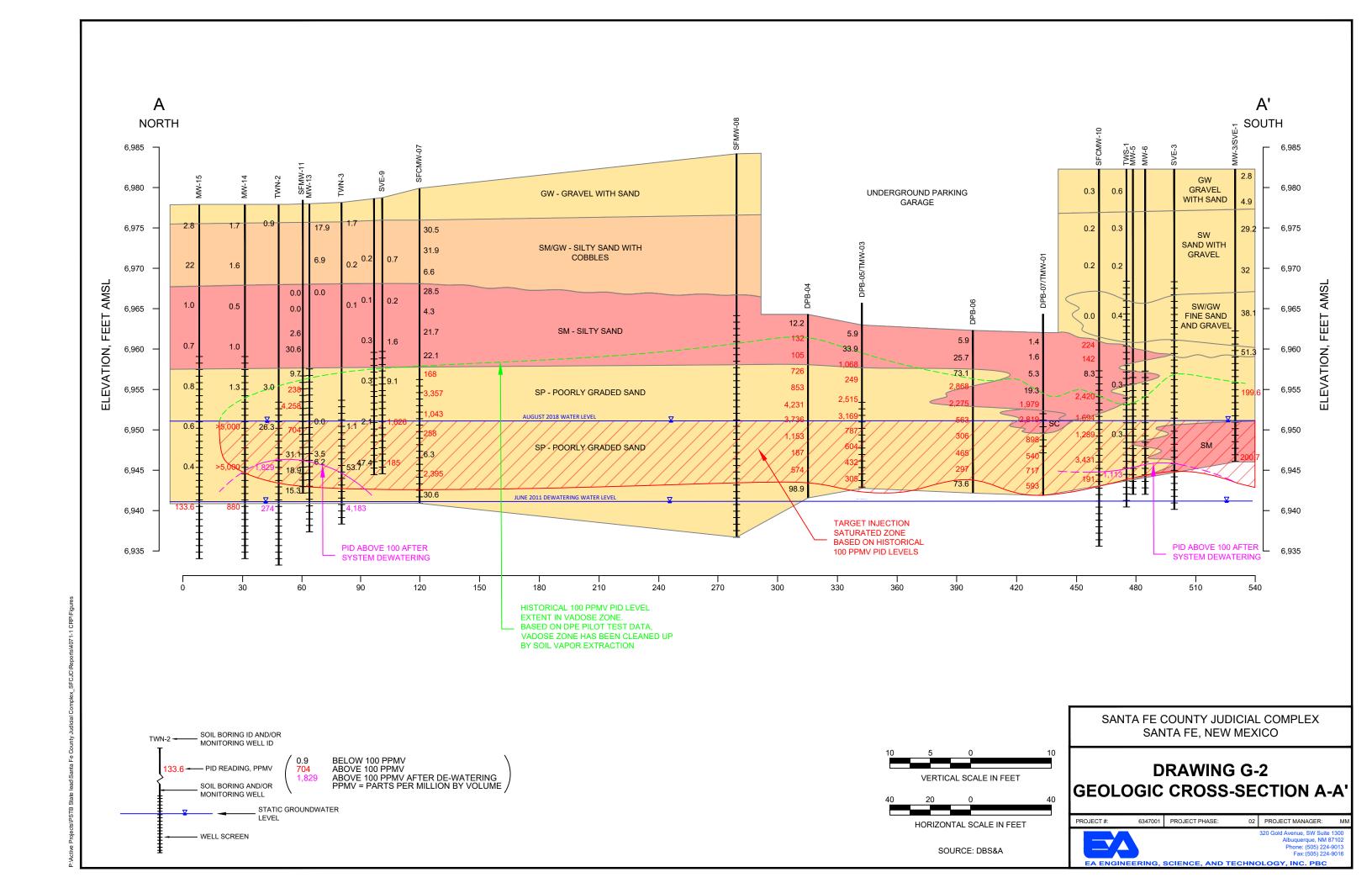
The design is robust and should achieve remediation goals; however, as part of the annual evaluation, recalcitrant hot spots will be evaluated and the need for additional treatment will be evaluated, if necessary.

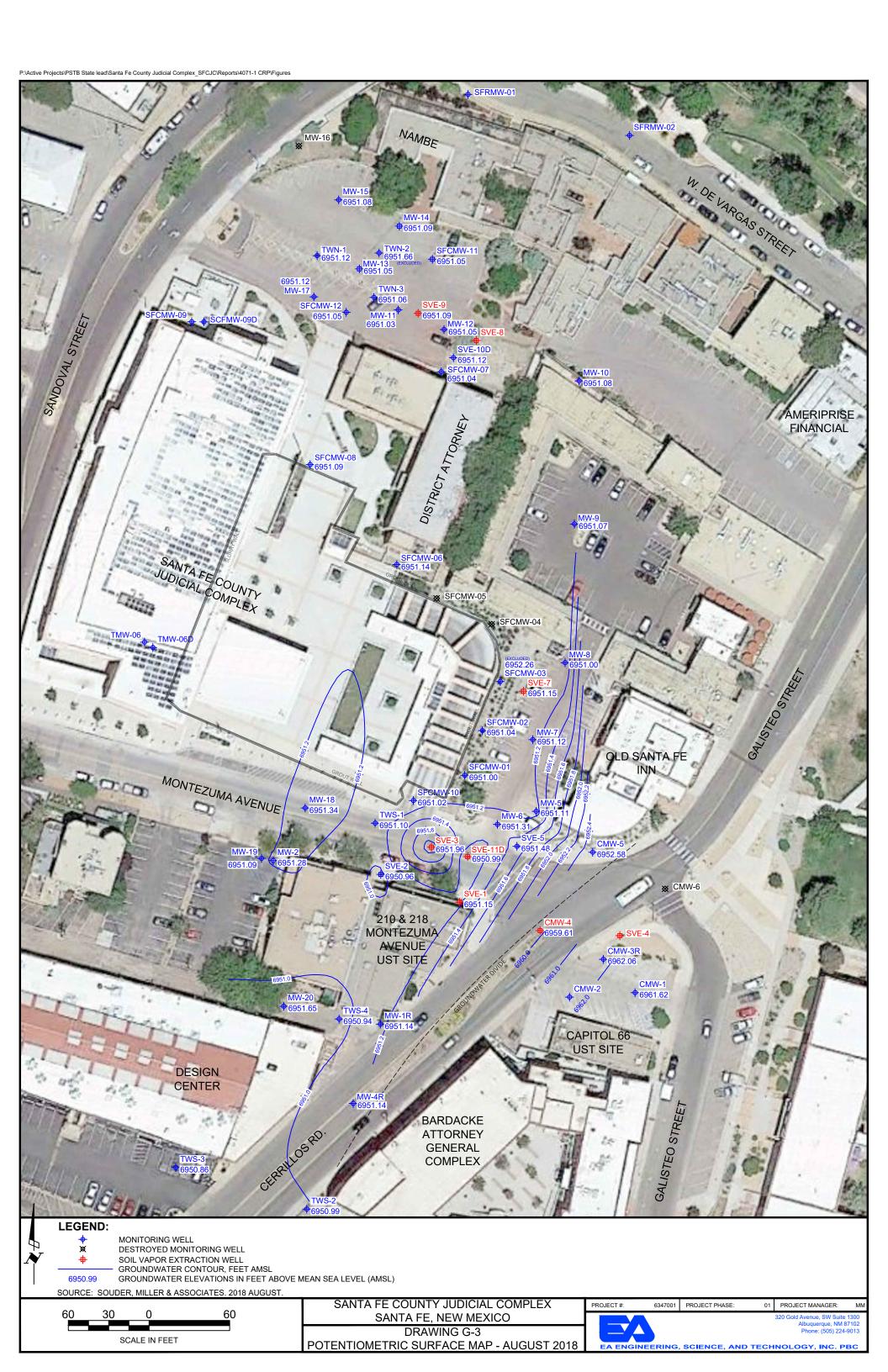
8.0 REFERENCES

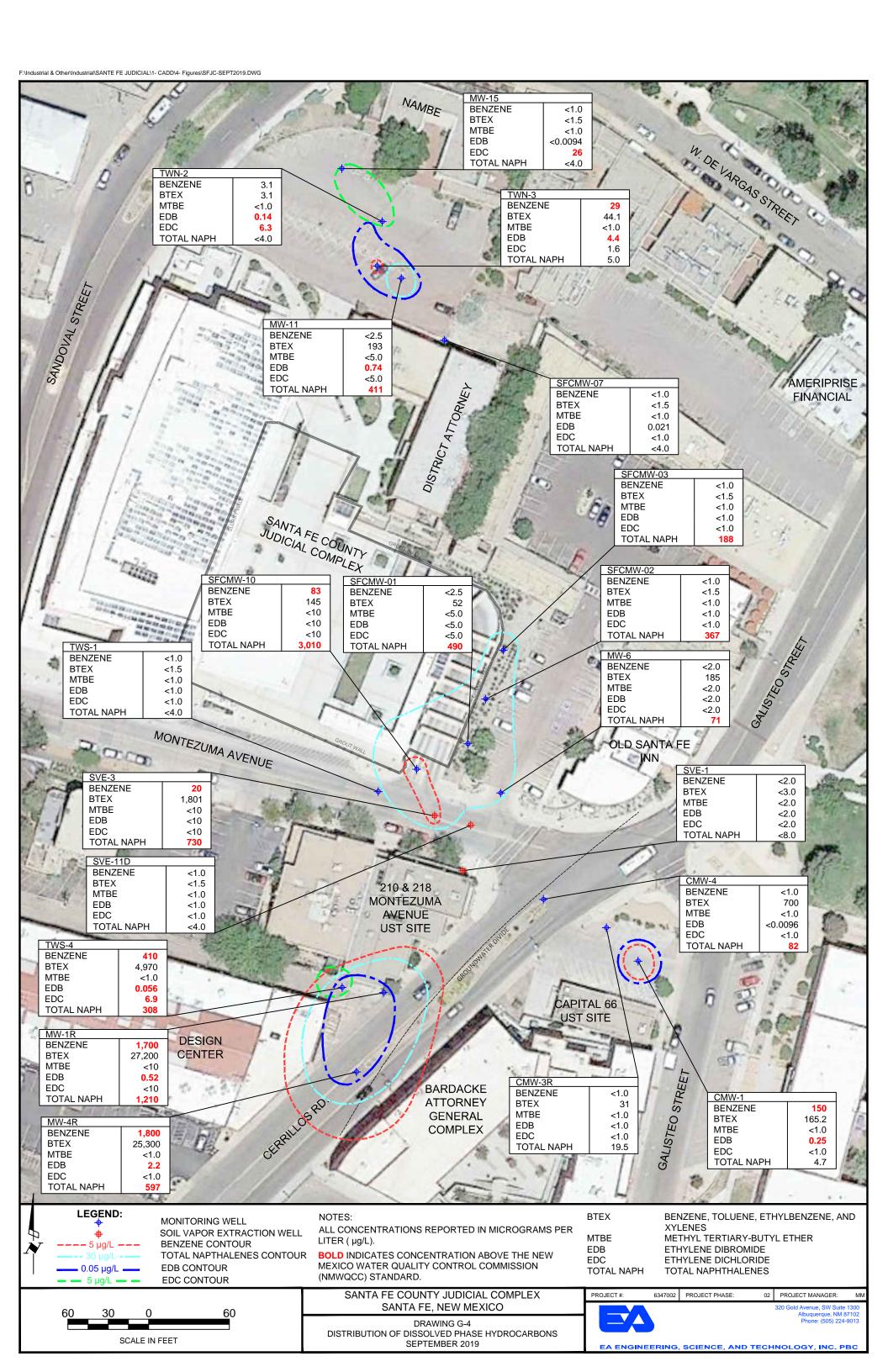
- EA Engineering, Science, and Technology, Inc. PBC (EA), 2019. Baseline Groundwater Monitoring Report. Santa Fe Country Judicial Complex, Santa Fe, New Mexico. December 10.
- EA, 2020. In Situ Microcosm Study Report. Santa Fe Country Judicial Complex, Santa Fe, New Mexico. February 28.
- EA, 2020. Benzene Plume Delineation, Contingency Set-Aside for Soil Borings, and Injection Target Depths Determination. Santa Fe Country Judicial Complex, Santa Fe, New Mexico. April 16.
- New Mexico Environment Department (NMED), 2019. Risk Assessment Guidance for Investigations and Remediation, Vol. 1, February 2019, Rev. 2. June 19, 2019.

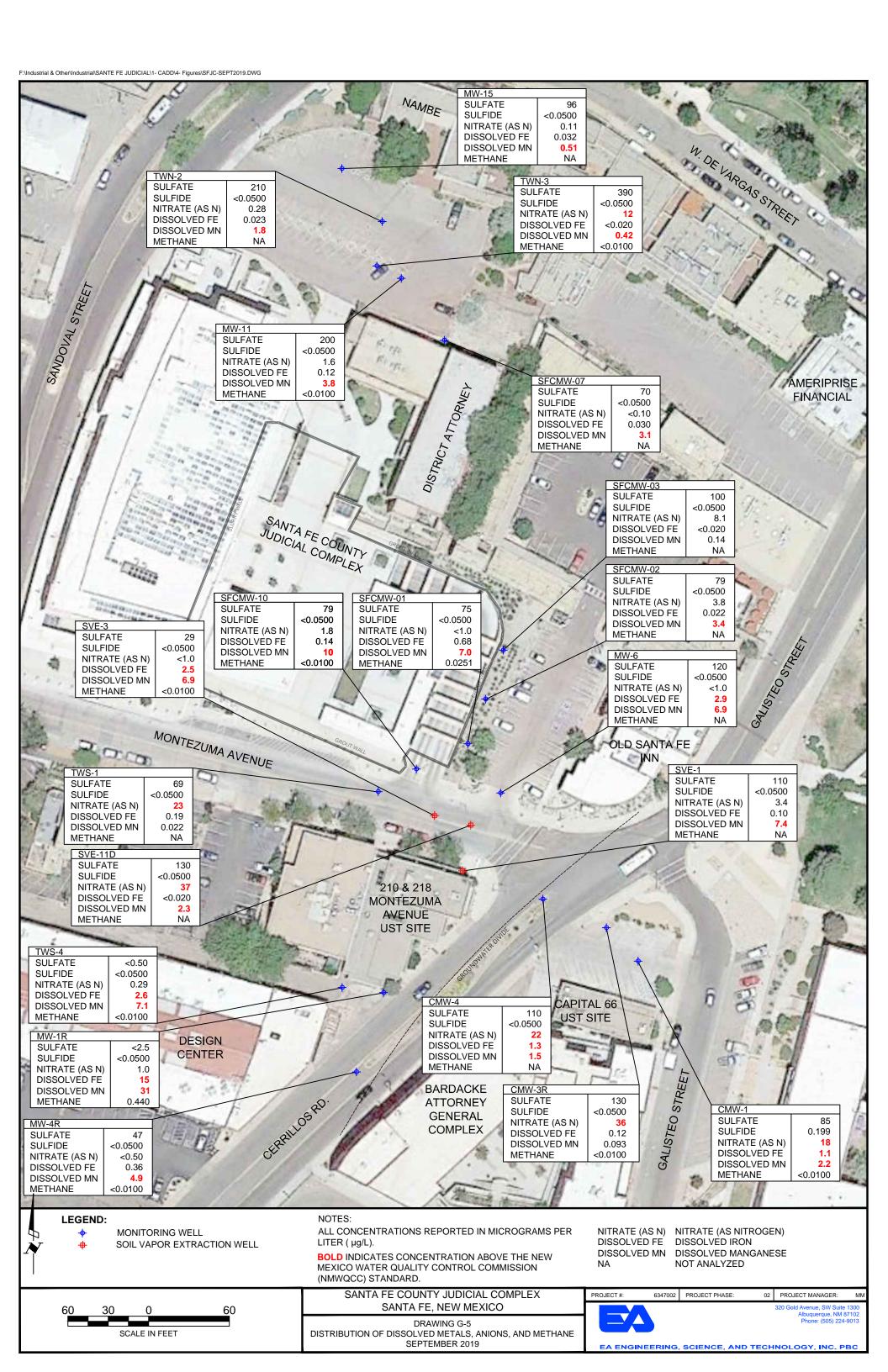












TABLES

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-1	6985.59	09/22/92	21.11		0.00	6964.48
		01/28/94	22.32		0.00	6963.27
		02/25/94	22.69		0.00	6962.90
		03/21/94	22.79		0.00	6962.80
		04/26/94	22.67		0.00	6962.92
		05/19/94	22.07		0.00	6963.52
		06/21/94	22.08		0.00	6963.51
		07/25/94	22.30		0.00	6963.29
		08/30/94	21.87		0.00	6963.72
		09/15/94	22.14		0.00	6963.45
		10/12/94	22.33		0.00	6963.26
		11/17/94	22.40		0.00	6963.19
		12/06/94	22.60		0.00	6962.99
		01/25/95	23.08		0.00	6962.51
		04/12/95	23.42		0.00	6962.17
		05/25/95	23.31		0.00	6962.28
		07/27/95	23.00		0.00	6962.59
		11/07/95	22.91		0.00	6962.68
		01/28/96	23.84		0.00	6961.75
		10/30/96	24.42		0.00	6961.17
		03/06/97	23.90		0.00	6961.69
		09/03/97	22.29		0.00	6963.30
		01/06/98	22.90		0.00	6962.69
		03/26/98	23.42		0.00	6962.17
		11/20/98	22.10		0.00	6963.49
		02/18/99	23.41		0.00	6962.18
		05/05/99	23.75		0.00	6961.84
		08/10/99	22.00		0.00	6963.59
		03/09/00	24.20		0.00	6961.39
		06/14/00	24.78		0.00	6960.81
		09/06/00	23.20		0.00	6962.39
		12/12/00	23.71		0.00	6961.88
		03/29/01	24.47		0.00	6961.12
		12/05/01	24.33		0.00	6961.26
		03/04/02	25.86		0.00	6959.73
		06/03/02	26.67		0.00	6958.92
		10/05/02	26.62		0.00	6958.97
		04/03/04	29.48		0.00	6956.11

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-1 (cont.)	6985.59	08/06/04	30.41		0.00	6955.18
		11/02/04	30.80		0.00	6954.79
		02/13/06	27.29		0.00	6958.30
		06/02/06	28.73		0.00	6956.86
		05/23/07	22.65		0.00	6962.94
		10/15/07	19.92		0.00	6965.67
		11/29/07	19.70		0.00	6965.89
		02/26/08	20.35		0.00	6965.24
		06/26/09	23.39		0.00	6962.20
		07/10/09	23.40		0.00	6962.19
		07/20/09	22.91		0.00	6962.68
		08/06/09	21.95		0.00	6963.64
		08/18/09	21.36		0.00	6964.23
		11/13/09	20.93		0.00	6964.66
		03/23/10	23.62		0.00	6961.97
		09/27/10	19.81		0.00	6965.78
		12/06/10	20.46		0.00	6965.13
		03/09/11	23.21		0.00	6962.38
		06/14/11	24.49		0.00	6961.10
		10/03/11	20.54		0.00	6965.05
		01/03/12	21.40		0.00	6964.19
		04/09/12	23.80		0.00	6961.79
		07/16/12	23.20		0.00	6962.39
		10/08/12	20.79		0.00	6964.80
		01/07/13	21.72		0.00	6963.87
		04/01/13	24.11		0.00	6961.48
		06/24/13	25.51		0.00	6960.08
		08/01/13	24.80		0.00	6960.79
		08/15/13	24.40		0.00	6961.19
		09/17/13	22.20		0.00	6963.39
		09/26/13	21.25		0.00	6964.34
		10/10/13	19.60		0.00	6965.99
		10/24/13	20.45		0.00	6965.14
		11/14/13	20.53		0.00	6965.06
		11/26/13	21.35		0.00	6964.24
		12/16/13	22.00		0.00	6963.59
		01/20/14	23.25		0.00	6962.34
		02/10/14	23.80		0.00	6961.79

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-1 (cont.)	6985.59	04/07/14	25.31		0.00	6960.28
, ,		07/14/14	24.43		0.00	6961.16
		10/26/15	18.40		0.00	6967.19
		04/06/16	23.09		0.00	6962.50
		12/14/16	21.66		0.00	6963.93
		08/14/17	24.78		0.00	6960.81
		02/20/18	25.33		0.00	6960.26
		08/09/18	23.97		0.00	6961.62
		02/22/19	24.82		0.00	6960.77
		09/24/19	21.40		0.00	6964.19
CMW-2	6984.43	09/22/92	23.06		0.00	6961.37
		01/28/94	23.85		0.00	6960.58
		02/25/94	24.17		0.00	6960.26
		03/21/94	24.24		0.00	6960.19
		04/26/94	24.11		0.00	6960.32
		05/19/94	23.81		0.00	6960.62
		06/21/94	23.68		0.00	6960.75
		07/25/94	23.98		0.00	6960.45
		08/30/94	23.55		0.00	6960.88
		09/15/94	23.71		0.00	6960.72
		10/12/94	23.90		0.00	6960.53
		11/17/94	24.02		0.00	6960.41
		12/06/94	24.21		0.00	6960.22
		01/25/95	24.42		0.00	6960.01
		04/12/95	24.75		0.00	6959.68
		05/25/95	24.61		0.00	6959.82
		06/26/95	24.55		0.00	6959.88
		07/27/95	24.37		0.00	6960.06
		11/07/95	24.13		0.00	6960.30
		10/30/96	24.46		0.00	6959.97
		03/06/97	24.42		0.00	6960.01
		09/03/97	22.48		0.00	6961.95
		01/06/98	23.08		0.00	6961.35
		03/26/98	23.18		0.00	6961.25
		11/20/98	22.33		0.00	6962.10
		02/18/99	23.38		0.00	6961.05
		05/05/99	23.79		0.00	6960.64
		08/10/99	22.30		0.00	6962.13

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-2 (cont.)	6984.43	03/09/00	23.75		0.00	6960.68
		06/14/00	24.56		0.00	6959.87
		06/14/00	24.56		0.00	6959.87
		09/06/00	23.78		0.00	6960.65
		09/06/00	23.78		0.00	6960.65
		12/12/00	24.02		0.00	6960.41
		03/29/01	23.45		0.00	6960.98
		12/05/01	25.97		0.00	6958.46
		03/04/02	25.33		0.00	6959.10
		06/03/02	25.86		0.00	6958.57
		10/05/02	25.77		0.00	6958.66
		04/03/04	28.13		0.00	6956.30
		08/06/04	28.91		0.00	6955.52
		11/02/04	29.17		0.00	6955.26
		02/13/06	27.37		0.00	6957.06
		06/02/06	27.40		0.00	6957.03
		05/23/07	21.70		0.00	6962.73
		10/15/07	20.59		0.00	6963.84
		11/29/07	20.71		0.00	6963.72
		02/26/08	21.00		0.00	6963.43
		06/26/09	23.07		0.00	6961.36
		07/10/09	23.12		0.00	6961.31
		07/20/09	22.85		0.00	6961.58
		08/06/09	22.44		0.00	6961.99
		08/17/09	22.23		0.00	6962.20
		11/13/09	21.58		0.00	6962.85
		03/23/10	23.25		0.00	6961.18
		09/27/10	21.35		0.00	6963.08
		12/06/10	21.37		0.00	6963.06
		03/09/11	23.16		0.00	6961.27
		06/14/11	23.82		0.00	6960.61
		07/18/11	24.11		0.00	6960.32
		07/22/11	24.00		0.00	6960.43
		07/25/11	24.00		0.00	6960.43
		08/01/11	23.88		0.00	6960.55
		08/08/11	23.75		0.00	6960.68
		08/22/11	23.35		0.00	6961.08
		09/06/11	22.78		0.00	6961.65

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-2 (cont.)	6984.43	09/19/11	22.33		0.00	6962.10
		10/03/11	22.02		0.00	6962.41
		10/17/11	21.77		0.00	6962.66
		11/01/11	21.64		0.00	6962.79
		11/15/11	21.80		0.00	6962.63
		01/03/12	22.46		0.00	6961.97
		04/09/12	23.81		0.00	6960.62
		07/16/12	23.51		0.00	6960.92
		10/08/12	22.00		0.00	6962.43
		01/07/13	22.67		0.00	6961.76
		04/01/13	24.68		0.00	6959.75
		06/24/13	25.00		0.00	6959.43
		08/01/13	25.03		0.00	6959.40
		08/15/13	24.58		0.00	6959.85
		09/17/13	23.55		0.00	6960.88
		09/26/13	23.10		0.00	6961.33
		10/10/13	22.30		0.00	6962.13
		10/24/13	22.10		0.00	6962.33
		11/14/13	22.10		0.00	6962.33
		11/26/13	22.54		0.00	6961.89
		12/16/13	22.80		0.00	6961.63
		01/20/14	23.35		0.00	6961.08
		02/10/14	23.70		0.00	6960.73
		04/07/14	24.80		0.00	6959.63
		07/14/14	24.80		0.00	6959.63
		10/27/15	16.83		0.00	6967.60
		04/07/16	23.46		0.00	6960.97
		12/14/16	22.32		0.00	6962.11
		08/14/17	24.10		0.00	6960.33
		02/20/18	24.63		0.00	6959.80
CMW-3	6984.85	09/22/92	22.14		0.00	6962.71
		01/28/94	22.65		0.00	6962.20
		02/25/94	22.80		0.00	6962.05
		03/21/94	22.88		0.00	6961.97
		04/26/94	22.75		0.00	6962.10
		05/19/94	22.36		0.00	6962.49
		06/21/94	22.35		0.00	6962.50
		07/25/94	22.64		0.00	6962.21

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-3 (cont.)	6984.85	08/30/94	22.36		0.00	6962.49
		09/15/94	22.44		0.00	6962.41
		10/12/94	22.55		0.00	6962.30
		11/17/94	22.62		0.00	6962.23
		12/06/94	22.77		0.00	6962.08
		01/25/95	22.92		0.00	6961.93
		04/12/95	23.12		0.00	6961.73
		05/25/95	22.93		0.00	6961.92
		06/26/95	22.85		0.00	6962.00
		07/27/95	22.71		0.00	6962.14
		11/07/95	22.73		0.00	6962.12
		01/28/96	23.18		0.00	6961.67
		10/30/96	24.60		0.00	6960.25
		03/06/97	24.42		0.00	6960.43
		09/03/97	22.20		0.00	6962.65
		01/06/98	22.71		0.00	6962.14
		03/26/98	22.61		0.00	6962.24
		11/20/98	22.24		0.00	6962.61
		02/18/99	23.86		0.00	6960.99
		05/05/99	23.83		0.00	6961.02
		03/09/00	23.79		0.00	6961.06
		06/14/00	23.67		0.00	6961.18
		09/06/00	23.90		0.00	6960.95
		12/12/00	22.98		0.00	6961.87
		03/29/01	21.87		0.00	6962.98
		12/05/01	24.26		0.00	6960.59
		03/04/02	24.51		0.00	6960.34
		06/03/02	25.34		0.00	6959.51
		10/05/02	25.47		0.00	6959.38
		04/03/04	26.38		0.00	6958.47
		08/06/04	27.15		0.00	6957.70
		11/02/04	27.10		0.00	6957.75
		02/04/06		Well plugg	ed and abandor	ned
CMW-3R	6984.45	02/13/06	26.17	25.95	0.22	6958.45
		06/02/06	28.27	27.17	1.10	6957.01
		05/23/07	21.61	21.56	0.05	6962.88
	[10/15/07	18.79	18.75	0.04	6965.69
		11/29/07	18.57	18.54	0.03	6965.90

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-3R (cont.)	6984.45	02/26/08	19.08	19.05	0.03	6965.39
		06/26/09	22.07	22.00	0.07	6962.43
		07/10/09	22.04	21.97	0.07	6962.46
		07/20/09	21.56	21.54	0.02	6962.91
		08/06/09	20.45	20.43	0.02	6964.02
		08/17/09	19.90	19.88	0.02	6964.57
		11/13/09	19.47		0.00	6964.98
		03/23/10	22.20		0.00	6962.25
		09/27/10	18.53		0.00	6965.92
		12/06/10	19.46		0.00	6964.99
		03/09/11	21.87		0.00	6962.58
		06/14/11	23.11		0.00	6961.34
		10/03/11	19.45		0.00	6965.00
		01/03/12	21.00		0.00	6963.45
		04/09/12	22.67		0.00	6961.78
		07/16/12	21.81		0.00	6962.64
		10/08/12	20.08		0.00	6964.37
		01/07/13	20.73		0.00	6963.72
		04/01/13	23.00		0.00	6961.45
		06/24/13	24.16	24.10	0.06	6960.34
		07/20/13	23.64		0.00	6960.81
		08/01/13	23.32		Sheen	6961.13
		08/15/13	22.69		Sheen	6961.76
		09/17/13	20.70		Sheen	6963.75
		09/26/13	19.80		Sheen	6964.65
		10/10/13	18.60		Sheen	6965.85
		10/24/13	18.50		Sheen	6965.95
		11/07/13	19.30		Sheen	6965.15
		11/14/13	19.05		Sheen	6965.40
		11/26/13	20.10		Sheen	6964.35
		12/16/13	20.82		0.00	6963.63
		01/20/14	21.83		0.00	6962.62
		02/10/14	22.33		0.00	6962.12
		04/07/14	23.91		0.00	6960.54
		07/14/14	22.91		0.00	6961.54
		10/27/15	17.00		0.00	6967.45
		04/07/16	21.70		0.00	6962.75
		12/14/16	20.26		0.00	6964.19

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-3R (cont.)	6984.45	08/14/17	23.31		0.00	6961.14
		02/20/18	23.93		0.00	6960.52
		08/09/18	22.39		0.00	6962.06
		02/21/19	23.28		0.00	6961.17
		09/24/19	19.99		0.00	6964.46
CMW-4	6983.21	11/03/09	21.05		0.00	6962.16
		11/08/09	21.00		0.00	6962.21
		11/13/09	21.05		0.00	6962.16
	6982.95 e	03/23/10	22.26		0.00	6960.69
		09/27/10	20.77		0.00	6962.18
		12/06/10	20.91		0.00	6962.04
		03/09/11	22.00		0.00	6960.95
		06/14/11	22.46		0.00	6960.49
		10/03/11	21.49		0.00	6961.46
		01/03/12	21.58		0.00	6961.37
		04/09/12	22.55		0.00	6960.40
		07/16/12	22.78		0.00	6960.17
		10/08/12	21.40		0.00	6961.55
		01/07/13	21.73		0.00	6961.22
		11/07/13	21.20		0.00	6961.75
		11/08/13	21.18		0.00	6961.77
		12/16/13	21.40		0.00	6961.55
		01/20/14	21.90		0.00	6961.05
		02/10/14	22.17		0.00	6960.78
		04/09/14	23.27		0.00	6959.68
		07/14/14	23.34		0.00	6959.61
		09/25/14	20.55		0.00	6962.40
		10/27/15	19.42		0.00	6963.53
		04/04/16	21.75		0.00	6961.20
		12/14/16	21.21		0.00	6961.74
		08/14/17	21.99		0.00	6960.96
		02/20/18	22.58		0.00	6960.37
		08/09/18	23.34		0.00	6959.61
		02/21/19	21.91		0.00	6961.04
		09/23/19	21.21		0.00	6961.74
CMW-5	6983.92	11/08/09	33.97		0.00	6949.95
		11/08/09	30.52		0.00	6953.40
		11/13/09	30.77		0.00	6953.15

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-5 (cont.)	6983.92	03/23/10	31.83		0.00	6952.09
		09/27/10	38.69		0.00	6945.23
		11/17/10	40.03		0.00	6943.89
		12/06/10	40.18		0.00	6943.74
		03/09/11	41.05		0.00	6942.87
		06/14/11	41.90		0.00	6942.02
		10/03/11	37.90		0.00	6946.02
		01/03/12	36.72		0.00	6947.20
		04/09/12	36.27		0.00	6947.65
		07/16/12	36.10		0.00	6947.82
		10/08/12	34.67		0.00	6949.25
		01/07/13	33.65		0.00	6950.27
		04/01/13	33.90		0.00	6950.02
		06/24/13	33.50		0.00	6950.42
		09/17/13	36.50		0.00	6947.42
		12/16/13	36.00		0.00	6947.92
		01/20/14	35.99		0.00	6947.93
		02/10/14	33.78		0.00	6950.14
		04/08/14	35.71		0.00	6948.21
		07/14/14	34.80		0.00	6949.12
		10/27/15	28.86		0.00	6955.06
		04/06/16	33.58		0.00	6950.34
		12/16/16	30.23		0.00	6953.69
		08/14/17	30.70		0.00	6953.22
		02/21/18	31.40		0.00	6952.52
		08/08/18	31.34		0.00	6952.58
		02/21/19	31.40		0.00	6952.52
CMW-6	6985.36	11/08/09	17.77		0.00	6967.59
		11/13/09	17.90		0.00	6967.46
		03/23/10	21.65		0.00	6963.71
		09/27/10	16.78		0.00	6968.58
		12/06/10	18.31		0.00	6967.05
		03/09/11	21.42		0.00	6963.94
		06/14/11	22.80		0.00	6962.56
		07/18/11	22.17		0.00	6963.19
		07/22/11	21.75		0.00	6963.61
		07/25/11	21.55		0.00	6963.81
		08/01/11	21.01		0.00	6964.35

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
CMW-6 (cont.)	6985.36	08/08/11	20.41		0.00	6964.95
		08/22/11	19.42		0.00	6965.94
		09/06/11	17.78		0.00	6967.58
		09/19/11	17.24		0.00	6968.12
		10/03/11	17.19		0.00	6968.17
		10/17/11	16.96		0.00	6968.40
		11/01/11	17.06		0.00	6968.30
		11/15/11	17.66		0.00	6967.70
		01/03/12	19.60		0.00	6965.76
		04/09/12	22.16		0.00	6963.20
		07/16/12	21.05		0.00	6964.31
		10/08/12	18.28		0.00	6967.08
		01/07/13	19.87		0.00	6965.49
		04/01/13	22.40		0.00	6962.96
		06/24/13	23.70		0.00	6961.66
		09/17/13	19.00		0.00	6966.36
		12/16/13	17.70		0.00	6967.66
		01/20/14	20.82		0.00	6964.54
		02/10/14	21.50		0.00	6963.86
		04/07/14	21.72		0.00	6963.64
		07/14/14	21.81		0.00	6963.55
		10/27/15	15.04		0.00	6970.32
		04/07/16	20.59		0.00	6964.77
		12/14/16		Wel	l destroyed	
MW-1	NA	09/23/03	28.00		Sheen	^d
		03/31/04		Well plugg	ed and abandor	ned
MW-1R	6982.74	04/03/04	31.13		0.00	6951.61
		08/06/04	30.05		0.00	6952.69
		11/02/04	30.03		0.00	6952.71
		02/13/06	30.69		0.00	6952.05
		06/02/06	31.19		0.00	6951.55
		02/16/07	30.21		0.00	6952.53
		05/23/07	27.51		0.00	6955.23
		08/29/07	26.91		0.00	6955.83
		11/15/07	26.85		0.00	6955.89
		09/15/08	28.36		0.00	6954.38
		12/19/08	28.65		0.00	6954.09
		03/09/09	29.72		0.00	6953.02

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-1R (cont.)	6982.74	05/22/09	30.46		0.00	6952.28
		06/26/09	30.45		0.00	6952.29
		07/10/09	30.43		0.00	6952.31
		07/17/09	30.53		0.00	6952.21
		07/20/09	30.41		0.00	6952.33
		08/06/09	30.38		0.00	6952.36
		08/18/09	30.36		0.00	6952.38
		11/08/09	29.94		0.00	6952.80
		03/23/10	29.71		0.00	6953.03
		09/27/10				
		through			Dry	
		01/03/12				
		04/09/12	35.18		0.00	6947.56
		07/16/12	34.55		0.00	6948.19
		10/08/12	34.00		0.00	6948.74
		01/07/13	33.17		0.00	6949.57
		04/01/13	34.22		0.00	6948.52
		06/24/13	33.40		0.00	6949.34
		09/17/13	34.20		0.00	6948.54
		10/10/13	32.90		0.00	6949.84
		12/16/13	32.20		0.00	6950.54
		01/20/14	32.08		0.00	6950.66
		02/10/14	31.97		0.00	6950.77
		04/09/14	32.27		0.00	6950.47
		07/14/14	31.90		0.00	6950.84
		09/24/14	30.67		0.00	6952.07
		10/27/15	24.90		0.00	6957.84
		04/05/16	28.61		0.00	6954.13
		12/14/16	28.53		0.00	6954.21
		08/14/17	28.77		0.00	6953.97
		02/21/18	30.75		0.00	6951.99
		08/09/18	31.54		0.00	6951.20
		02/21/19	30.90		0.00	6951.84
		09/24/19	29.96		0.00	6952.78
MW-2	6980.28	09/23/03	28.87		0.00	6951.41
		09/23/03	28.87		0.00	6951.41
		04/03/04	29.06		0.00	6951.22
		08/06/04	28.15		0.00	6952.13

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-2 (cont.)	6980.28	11/02/04	27.79		0.00	6952.49
		02/13/06	28.00		0.00	6952.28
		06/02/06	28.64		0.00	6951.64
		02/16/07	28.50		0.00	6951.78
		05/23/07	28.12		0.00	6952.16
		08/29/07	27.83		0.00	6952.45
		11/15/07	28.06		0.00	6952.22
		09/15/08	27.99		0.00	6952.29
		12/19/08	27.90		0.00	6952.38
		03/09/09	28.04		0.00	6952.24
		05/22/09	28.57		0.00	6951.71
		06/26/09	28.58		0.00	6951.70
		07/10/09	28.50		0.00	6951.78
		07/17/09	28.59		0.00	6951.69
		07/20/09	28.48		0.00	6951.80
		08/06/09	28.45		0.00	6951.83
		08/18/09	28.46		0.00	6951.82
		11/08/09	28.16		0.00	6952.12
		03/23/10	25.12		0.00	6955.16
		09/27/10				
		through			Dry	
		06/14/11				
		01/03/12		Su	mp water	
		04/09/12	29.80		0.00	6950.48
		07/16/12			Dry	
		10/08/12	31.20		0.00	6949.08
		01/07/13	30.96		0.00	6949.32
		04/01/13	30.88		0.00	6949.40
		06/24/13	30.80		0.00	6949.48
		09/17/13	30.20		0.00	6950.08
		12/16/13	29.52		0.00	6950.76
		01/20/14	29.62		0.00	6950.66
		02/10/14	29.66		0.00	6950.62
		04/07/14	29.79		0.00	6950.49
		07/14/14	29.26		0.00	6951.02
		10/26/15	25.91		0.00	6954.37
		04/07/16	27.20		0.00	6953.08
		12/14/16	27.93		0.00	6952.35

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-2 (cont.)	6980.28	08/14/17	27.79		0.00	6952.49
		02/21/18	28.48		0.00	6951.80
		08/08/18	29.00		0.00	6951.28
		02/21/19	28.64		0.00	6951.64
MW-3	6981.91	04/03/04	32.50	29.47	3.03	6951.68
		08/06/04	30.85	28.65	2.20	6952.71
		11/02/04	31.27	28.73	2.54	6952.55
		06/02/05	29.54	28.47	1.07	6953.17
		06/08/05	29.92	28.36	1.56	6953.16
		06/14/05	30.00	28.39	1.61	6953.12
		06/16/05	29.51	28.55	0.96	6953.12
		06/21/05	29.93	28.48	1.45	6953.07
		06/24/05	30.02	28.45	1.57	6953.07
		06/28/05	29.80	28.56	1.24	6953.04
		07/01/05	29.55	28.70	0.85	6953.00
		07/07/05	29.85	28.66	1.19	6952.95
		07/14/05	29.93	28.71	1.22	6952.90
		07/28/05	29.73	28.95	0.78	6952.77
		08/12/05	30.29	28.92	1.37	6952.65
		08/25/05	30.12	29.08	1.04	6952.57
		09/02/05	30.03	29.18	0.85	6952.52
		09/09/05	30.02	29.20	0.82	6952.51
		09/21/05	30.45	29.13	1.32	6952.45
		10/14/05	31.14	28.98	2.16	6952.39
		11/03/05	31.08	29.03	2.05	6952.37
		12/02/05	31.54	29.02	2.52	6952.26
		12/28/05	31.84	29.09	2.75	6952.13
		02/13/06	32.25	29.23	3.02	6951.93
		04/05/06	32.62	29.40	3.22	6951.71
		05/17/06	32.92	29.51	3.41	6951.55
		06/02/06	32.99	29.56	3.43	6951.49
		06/07/06	33.00	29.56	3.44	6951.49
		08/04/06	32.30	29.35	2.95	6951.82
		08/18/06	31.81	29.22	2.59	6952.04
		09/01/06	31.28	29.00	2.28	6952.34
		09/08/06	30.99	28.87	2.12	6952.51
		09/18/06	30.67	28.71	1.96	6952.71
		09/22/06	30.51	29.67	0.84	6952.03

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-3 (cont.)	6981.91	09/29/06	30.48	28.67	1.81	6952.79
		10/06/06	30.50	28.70	1.80	6952.76
		10/13/06	30.53	28.75	1.78	6952.72
		10/18/06	30.50	28.81	1.69	6952.68
		10/26/06	30.50	28.70	1.80	6952.76
		11/10/06	30.73	28.92	1.81	6952.54
		11/29/06	30.93	29.04	1.89	6952.40
		12/27/06	31.43	29.19	2.24	6952.16
		01/23/07	31.30	29.11	2.19	6952.25
		02/13/07	31.20	29.10	2.10	6952.29
		02/16/07	30.60	29.29	1.31	6952.29
		03/01/07	31.02	29.10	1.92	6952.33
		03/07/07	30.69	29.18	1.51	6952.35
		03/16/07	30.65	29.14	1.51	6952.39
		03/23/07	30.44	29.16	1.28	6952.43
		05/23/07	27.81		0.00	6954.10
		08/07/07	26.83	26.70	0.13	6955.18
		08/29/07	27.21	27.05	0.16	6954.82
		11/15/07	26.63		0.00	6955.28
		02/06/08	27.57	27.50	0.07	6954.39
		03/19/08	26.95		0.00	6954.96
		05/06/08	27.13	27.11	0.02	6954.80
		06/25/08	28.27	28.06	0.21	6953.80
		09/15/08	27.83	27.78	0.05	6954.12
		12/19/08	28.35	27.92	0.43	6953.88
		03/09/09	29.37	29.00	0.37	6952.82
		05/22/09	30.52	29.36	1.16	6952.26
		06/26/09	30.38	29.37	1.01	6952.29
		07/10/09		Well repla	aced with SVE-	-1
MW-4	6983.24	02/13/06	31.18		0.00	6952.06
		06/02/06	31.70		0.00	6951.54
		02/16/07	30.71		0.00	6952.53
		05/23/07	28.36		0.00	6954.88
		08/29/07	27.72		0.00	6955.52
		11/15/07	27.73		0.00	6955.51
		09/15/08	29.13		0.00	6954.11
		12/19/08	29.38		0.00	6953.86
		03/09/09	30.31		0.00	6952.93

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-4 (cont.)	6983.24	05/22/09	31.00		0.00	6952.24
		06/26/09	30.96		0.00	6952.28
		07/10/09	30.95		0.00	6952.29
		07/17/09	31.03		0.00	6952.21
		07/20/09	30.91		0.00	6952.33
		08/06/09	30.90		0.00	6952.34
		08/18/09	30.87		0.00	6952.37
		03/23/10	30.17		0.00	6953.07
		09/27/10				
		through			Dry	
		11/15/11				
		01/03/12		Su	mp water	
		04/09/12	35.70		Sheen	6947.54
		07/16/12	35.00		0.00	6948.24
		10/08/12	34.47	34.40	0.07	6948.82
		01/07/13	33.92	33.81	0.11	6949.40
		04/01/13	34.03		0.00	6949.21
		06/24/13	33.10		0.00	6950.14
		09/17/13	34.78		0.00	6948.46
		10/10/13	33.40		0.00	6949.84
		12/16/13	32.80		0.00	6950.44
		01/20/14	32.60		0.00	6950.64
		02/10/14	32.57		0.00	6950.67
MW-4R	6983.38 m	07/14/14	32.61		0.00	6950.77
		09/24/14	31.83		0.00	6951.55
		10/28/15	26.70		0.00	6956.68
		04/06/16	29.59		0.00	6953.79
		12/14/16	29.68		0.00	6953.70
		08/14/17	29.57		0.00	6953.81
		02/21/18	31.21		0.00	6952.17
		08/09/18	32.24		0.00	6951.14
		02/21/19	31.52		0.00	6951.86
		09/24/19	30.81		0.00	6952.57
MW-5	6983.37	02/21/06	31.52		0.00	6951.85
		06/02/06	31.88		0.00	6951.49
		02/16/07	31.34		0.00	6952.03
		05/23/07	30.47		0.00	6952.90
		08/29/07	29.75		0.00	6953.62

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-5 (cont.)	6983.37	11/15/07	29.72		0.00	6953.65
		09/15/08	30.13		0.00	6953.24
		12/19/08	30.24		0.00	6953.13
		03/09/09	31.01		0.00	6952.36
		05/22/09	31.33		0.00	6952.04
		06/26/09	31.26		0.00	6952.11
		07/10/09	31.26		0.00	6952.11
		07/17/09	31.37		0.00	6952.00
		07/20/09	31.24		0.00	6952.13
		08/06/09	31.22		0.00	6952.15
		08/17/09	31.23		0.00	6952.14
		11/08/09	31.07		0.00	6952.30
		03/23/10	30.55		0.00	6952.82
		09/27/10				
		through			Dry	
		06/14/11				
		10/03/11	39.54		0.00	6943.83
		01/03/12	37.21		0.00	6946.16
		04/09/12	35.85		0.00	6947.52
		07/16/12	35.18		0.00	6948.19
		10/08/12	34.60		0.00	6948.77
		01/07/13	34.12		0.00	6949.25
		04/01/13	34.00		0.00	6949.37
		06/24/13	34.01		0.00	6949.36
		09/17/13	33.50		0.00	6949.87
		12/16/13	32.85		0.00	6950.52
		01/20/14	32.75		0.00	6950.62
		02/10/14	32.71		0.00	6950.66
		04/09/14	32.90		0.00	6950.47
		07/14/14	32.50		0.00	6950.87
		10/28/15	27.40		0.00	6955.97
		04/05/16	30.16		0.00	6953.21
		12/16/16	31.02		0.00	6952.35
		08/14/17	30.56		0.00	6952.81
		02/21/18	31.76		0.00	6951.61
		08/09/18	32.26		0.00	6951.11
		02/21/19	31.90		0.00	6951.47
MW-6	6982.64	07/17/09	30.61		Sheen	6952.03

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-6 (cont.)	6982.64	07/20/09	30.51		0.00	6952.13
		08/06/09	30.58	30.47	0.11	6952.14
		08/17/09	30.59	30.46	0.13	6952.15
		09/14/09	30.65	30.48	0.17	6952.12
		11/08/09	30.36	30.31	0.05	6952.32
		11/13/09	30.30	30.27	0.03	6952.36
		03/23/10	29.80		0.00	6952.84
		09/27/10				
		through			Dry	
		07/18/11				
		10/03/11	38.90		0.00	6943.74
		01/03/12	36.40		0.00	6946.24
		04/09/12	35.06		0.00	6947.58
		07/16/12	34.40		0.00	6948.24
		10/08/12	33.81		0.00	6948.83
		01/07/13	33.36		0.00	6949.28
		04/01/13	33.33		0.00	6949.31
		06/24/13	33.30		0.00	6949.34
		07/25/13	33.20		0.00	6949.44
		08/08/13	33.10		0.00	6949.54
		08/22/13	33.10		0.00	6949.54
		09/17/13	33.10		0.00	6949.54
		09/26/13	32.80		0.00	6949.84
		10/10/13	32.70		0.00	6949.94
		10/24/13	32.60		0.00	6950.04
		11/14/13	32.35		0.00	6950.29
		11/26/13	32.51		0.00	6950.13
		12/16/13	32.20		0.00	6950.44
		01/20/14	32.10		0.00	6950.54
		02/10/14	32.08		0.00	6950.56
		04/09/14	33.29		0.00	6949.35
		07/14/14	31.79		0.00	6950.85
		09/25/14	31.21		0.00	6951.43
		10/28/15	26.73		0.00	6955.91
		04/05/16	29.56		0.00	6953.08
		12/14/16	30.30		0.00	6952.34
		08/14/17	29.98		0.00	6952.66
		08/09/18	31.33		0.00	6951.31

	Top of Casing		Depth to	Depth to	NAPL	Groundwater	
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b	
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)	
MW-6 (cont.)	6982.64	02/21/19	30.94		0.00	6951.70	
		09/23/19	30.10		0.00	6952.54	
MW-7	6983.66	07/17/09	31.65		0.00	6952.01	
		07/20/09	31.53		0.00	6952.13	
		08/06/09	31.52		0.00	6952.14	
		08/17/09	31.52		0.00	6952.14	
		11/08/09	31.40		0.00	6952.26	
		03/23/10	30.82		0.00	6952.84	
		09/27/10					
		through			Dry		
		06/14/11					
		10/03/11		Su	mp water		
		01/03/12	37.28		0.00	6946.38	
		04/09/12	35.93		0.00	6947.73	
		07/16/12	35.38		0.00	6948.28	
		10/08/12	34.85		0.00	6948.81	
		01/07/13	34.45		0.00	6949.21	
		04/01/13	34.30		0.00	6949.36	
		06/24/13	34.25		0.00	6949.41	
		09/17/13	33.85		0.00	6949.81	
		12/16/13	33.40		0.00	6950.26	
		01/20/14	33.52		0.00	6950.14	
		02/10/14	33.09		0.00	6950.57	
		04/09/14	33.30		0.00	6950.36	
		07/14/14	32.81		0.00	6950.85	
		10/28/15	28.10		0.00	6955.56	
		04/05/16	30.45		0.00	6953.21	
		12/14/16	31.15		0.00	6952.51	
		08/14/17	31.38		0.00	6952.28	
		02/20/18	31.96		0.00	6951.70	
		08/09/18	32.54		0.00	6951.12	
		02/21/19	32.13		0.00	6951.53	
MW-8	6984.36	07/17/09	32.39		0.00	6951.97	
		07/20/09	32.28		0.00	6952.08	
		08/06/09	32.28		0.00	6952.08	
		08/17/09	32.26		0.00	6952.10	
		11/08/09	32.17		0.00	6952.19	
		03/23/10	31.67		0.00	6952.69	

	Top of Casing		Depth to	Depth to	NAPL	Groundwater		
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b		
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)		
MW-8 (cont.)	6984.36	09/27/10	39.94		0.00	6944.42		
		12/06/10		•				
		through	Dry					
		06/14/11	_					
		10/03/11		Su	mp water			
		01/03/12	37.78		0.00	6946.58		
		04/09/12	36.60		0.00	6947.76		
		07/16/12	36.00		0.00	6948.36		
		10/08/12	35.55		0.00	6948.81		
		01/07/13	35.17		0.00	6949.19		
		04/01/13	35.08		0.00	6949.28		
		06/24/13	35.00		0.00	6949.36		
		09/17/13	34.50		0.00	6949.86		
		12/16/13	34.09		0.00	6950.27		
		01/20/14	34.20		0.00	6950.16		
		02/10/14	33.96		0.00	6950.40		
		04/08/14	34.21		0.00	6950.15		
		07/14/14	33.51		0.00	6950.85		
		10/28/15	Well blocked					
		04/06/16	31.68		0.00	6952.68		
		12/14/16	32.33		0.00	6952.03		
		08/14/17	32.41		0.00	6951.95		
		02/20/18	32.94		0.00	6951.42		
		08/08/18	33.36		0.00	6951.00		
		02/21/19	33.14		0.00	6951.22		
MW-9	6985.90	07/21/09	33.86		0.00	6952.04		
		03/24/10	33.27		0.00	6952.63		
		09/27/10	41.65		0.00	6944.25		
		12/06/10						
		through			Dry			
		06/14/11		_		_		
		10/03/11	41.58		0.00	6944.32		
		01/03/12	39.24		0.00	6946.66		
		04/09/12	38.07		0.00	6947.83		
		07/16/12	37.48		0.00	6948.42		
		10/08/12	36.98		0.00	6948.92		
		01/07/13	36.69		0.00	6949.21		
		04/01/13	36.50		0.00	6949.40		

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-9 (cont.)	6985.90	06/24/13	36.54		0.00	6949.36
		09/17/13	36.00		0.00	6949.90
		12/16/13	35.65		0.00	6950.25
		01/20/14	35.50		0.00	6950.40
		02/10/14	35.56		0.00	6950.34
		04/07/14	35.74		0.00	6950.16
		07/14/14	35.06		0.00	6950.84
		10/26/15	31.36		0.00	6954.54
		04/07/16	33.23		0.00	6952.67
		12/14/16	33.31		0.00	-33.31
		08/14/17	33.39		0.00	-33.39
		02/20/18	33.91		0.00	-33.91
		08/08/18	34.28		0.00	-34.28
		02/21/19	34.07		0.00	-34.07
MW-10	6984.27	08/03/09	32.17		0.00	6952.10
		03/23/10	31.68		0.00	6952.59
		09/27/10	39.11		0.00	6945.16
		10/25/10	40.28		0.00	6943.99
		12/06/10	40.95		0.00	6943.32
		03/09/11	41.03		0.00	6943.24
		06/14/11	41.16		0.00	6943.11
		10/03/11	39.43		0.00	6944.84
		01/03/12	37.50		0.00	6946.77
		04/09/12	36.38		0.00	6947.89
		07/16/12	35.75		0.00	6948.52
		10/08/12	34.82		0.00	6949.45
		01/07/13		Well n	ot accessible	
		04/01/13	34.84		0.00	6949.43
		06/24/13	34.85		0.00	6949.42
		09/17/13	34.35		0.00	6949.92
		12/16/13	33.50		0.00	6950.77
		01/20/14	33.75		0.00	6950.52
		02/10/14	33.52		0.00	6950.75
		04/07/14	34.07		0.00	6950.20
		07/14/14	33.42		0.00	6950.85
		10/26/15	29.52		0.00	6954.75
		04/07/16	31.59		0.00	6952.68
		12/14/16	32.23		0.00	6952.04

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-10 (cont.)	6984.27	08/14/17	32.38		0.00	6951.89
, ,		02/20/18	32.83		0.00	6951.44
		08/08/18	33.19		0.00	6951.08
		02/22/19	32.98		0.00	6951.29
MW-11	6978.14	10/31/09	26.24		0.00	6951.90
		11/07/09	26.12		0.00	6952.02
		03/23/10	25.61		0.00	6952.53
		09/27/10		33.04	1.66	6944.69
		10/25/10				
		through			Dry	
		06/14/11				
		10/03/11		Su	mp water	
		01/03/12	31.57		0.00	6946.57
		04/09/12	30.60		0.00	6947.54
		07/16/12	29.90		0.00	6948.24
		11/08/12	29.22		0.00	6948.92
		01/07/13	29.02		0.00	6949.12
		04/01/13	28.90		0.00	6949.24
		06/24/13	28.63		0.00	6949.51
		09/17/13	28.30		0.00	6949.84
		10/10/13	28.20		0.00	6949.94
		12/16/13	27.90		0.00	6950.24
		01/20/14	27.80		0.00	6950.34
		02/10/14	27.80		0.00	6950.34
		04/07/14	28.03		0.00	6950.11
		07/14/14	27.31		0.00	6950.83
		09/24/14	27.19		0.00	6950.95
		10/26/15	23.86		0.00	6954.28
		04/04/16	25.62		0.00	6952.52
		12/14/16	26.16		0.00	6951.98
		08/14/17	26.34		0.00	6951.80
		02/19/18	26.65		0.00	6951.49
		08/08/18	27.11		0.00	6951.03
		02/20/19	27.00		0.00	6951.14
		09/23/19	26.02		0.00	6952.12
MW-12	6978.97	10/24/09	26.98		0.00	6951.99
		11/07/09	26.92		0.00	6952.05
		03/23/10	26.44		0.00	6952.53

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-12 (cont.)	6978.97	10/25/10				
,		through			Dry	
		10/03/11			,	
		01/03/12	32.38		0.00	6946.59
		04/09/12	31.32		0.00	6947.65
		07/16/12	30.68		0.00	6948.29
		10/08/12	30.10		0.00	6948.87
		01/07/13	29.81		0.00	6949.16
		04/01/13	29.68		0.00	6949.29
		06/24/13	29.55		0.00	6949.42
		09/17/13	29.11		0.00	6949.86
		12/17/13	28.80		0.00	6950.17
		01/20/14	28.60		0.00	6950.37
		02/10/14	28.60		0.00	6950.37
		04/07/14	28.81		0.00	6950.16
		07/14/14	28.12		0.00	6950.85
		10/26/15	24.57		0.00	6954.40
		04/04/16	26.36		0.00	6952.61
		12/14/16	26.95		0.00	6952.02
		08/14/17	27.11		0.00	6951.86
		02/19/18	27.65		0.00	6951.32
		08/08/18	27.92		0.00	6951.05
		02/21/19	27.79		0.00	6951.18
MW-13	6977.42	03/09/11	36.15		0.00	6941.27
		06/14/11	35.10		0.00	6942.32
		10/03/11	32.99		0.00	6944.43
		01/03/12	30.54		0.00	6946.88
		04/09/12	29.59		0.00	6947.83
		07/16/12	29.00		0.00	6948.42
		10/08/12	28.50		0.00	6948.92
		01/07/13	28.20		0.00	6949.22
		04/01/13	28.00		0.00	6949.42
		06/24/13	27.96		0.00	6949.46
		09/17/13	27.50		0.00	6949.92
		10/10/13	27.40		0.00	6950.02
		12/16/13	27.09		0.00	6950.33
		01/20/14	27.10		0.00	6950.32
		02/10/14	26.87		0.00	6950.55

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-13 (cont.)	6977.42	04/07/14	27.26		0.00	6950.16
		07/14/14	26.55		0.00	6950.87
		09/24/14	26.46		0.00	6950.96
		10/26/15	23.17		0.00	6954.25
		04/04/16	24.89		0.00	6952.53
		12/14/16	25.45		0.00	6951.97
		08/14/17	25.50		0.00	6951.92
		02/19/18	25.80		0.00	6951.62
		08/08/18	26.37		0.00	6951.05
		02/20/19	26.24		0.00	6951.18
MW-14	6978.05	03/09/11	35.85		0.00	6942.20
		06/14/11	36.08		0.00	6941.97
		10/03/11	33.63		0.00	6944.42
		01/03/12	31.10		0.00	6946.95
		04/09/12	29.91		0.00	6948.14
		07/16/12	29.38		0.00	6948.67
		10/08/12	29.14		0.00	6948.91
		01/07/13	28.81		0.00	6949.24
		04/01/13	28.71		0.00	6949.34
		06/24/13	28.62		0.00	6949.43
		09/17/13	28.10		0.00	6949.95
		12/16/13	27.80		0.00	6950.25
		01/20/14	27.69		0.00	6950.36
		02/10/14	27.66		0.00	6950.39
		04/07/14	27.86		0.00	6950.19
		07/14/14	27.17		0.00	6950.88
		09/24/14	27.08		0.00	6950.97
		10/26/15	23.81		0.00	6954.24
		04/04/16	25.50		0.00	6952.55
		12/14/16	26.04		0.00	6952.01
		08/14/17	26.15		0.00	6951.90
		02/19/18	26.46		0.00	6951.59
		08/08/18	26.96		0.00	6951.09
, ·	66== ::	02/20/19	26.86		0.00	6951.19
MW-15	6977.43	03/09/11	36.25		0.00	6941.18
		05/09/11	37.26		0.00	6940.17
		06/14/11	36.81		0.00	6940.62
		10/03/11	33.00		0.00	6944.43

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-15 (cont.)	6977.43	01/03/12	30.92		0.00	6946.51
		04/09/12	29.60		0.00	6947.83
		07/16/12	29.00		0.00	6948.43
		10/08/12	28.52		0.00	6948.91
		01/07/13	28.18		0.00	6949.25
		04/01/13	28.10		0.00	6949.33
		06/24/13	27.98		0.00	6949.45
		09/17/13	27.50		0.00	6949.93
		12/16/13	27.13		0.00	6950.30
		01/20/14	27.05		0.00	6950.38
		02/10/14	27.00		0.00	6950.43
		04/07/14	27.22		0.00	6950.21
		07/14/14	26.55		0.00	6950.88
		10/26/15	23.22		0.00	6954.21
		04/04/16	24.87		0.00	6952.56
		12/14/16	25.42		0.00	6952.01
		08/14/17	25.52		0.00	6951.91
		02/19/18	25.92		0.00	6951.51
		08/08/18	26.35		0.00	6951.08
		02/20/19	26.26		0.00	6951.17
		09/24/19	25.29		0.00	6952.14
MW-16	6972.49 m	08/11/14	21.59		0.00	6950.90
		10/26/15	18.32		0.00	6954.17
		04/07/16	19.97		0.00	6952.52
		12/14/16		Well	paved over	
MW-17	6977.37 m	08/11/14	26.48		0.00	6950.89
		10/26/15	23.04		0.00	6954.33
		04/04/16	24.68		0.00	6952.69
		12/14/16	25.34		0.00	6952.03
		08/14/17	25.47		0.00	6951.90
		02/19/18	25.82		0.00	6951.55
		08/08/18	26.25		0.00	6951.12
		02/20/19	26.16		0.00	6951.21
MW-18	6979.04 m	08/11/14	28.12		0.00	6950.92
		09/24/14	27.90		0.00	6951.14
		10/26/15	24.30		0.00	6954.74
		04/06/16	26.14		0.00	6952.90
		12/14/16	26.45		0.00	6952.59

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
MW-18 (cont.)	6979.04 m	08/15/17	26.83		0.00	6952.21
		02/21/18	27.57		0.00	6951.47
		08/09/18	27.70		0.00	6951.34
		02/22/19	27.60		0.00	6951.44
MW-19	6979.96 m	08/11/14	29.21		0.00	6950.75
		10/26/15	25.76		0.00	6954.20
		04/07/16	27.15		0.00	6952.81
		12/14/16	27.81		0.00	6952.15
		08/14/17	27.69		0.00	6952.27
		02/21/18	28.41		0.00	6951.55
		08/08/18	28.90		0.00	6951.06
		02/22/19	28.59		0.00	6951.37
MW-20	6981.70 m	08/11/14	30.31		0.00	6951.39
		09/24/14	30.28		0.00	6951.42
		10/26/15	26.59		0.00	6955.11
		04/05/16	27.44		0.00	6954.26
		12/14/16	28.40		0.00	6953.30
		08/14/17	27.16		0.00	6954.54
		02/21/18	29.03		0.00	6952.67
		08/09/18	30.05		0.00	6951.65
		02/21/19	29.78		0.00	6951.92
SFCMW-01	6983.72	04/22/09	32.85	31.86	0.99	6951.61
		04/28/09	32.81	31.59	1.22	6951.83
		05/11/09	32.97	31.34	1.63	6951.97
		06/26/09	33.23	31.13	2.10	6952.07
		06/30/09	33.21	31.12	2.09	6952.08
		07/02/09	33.21	31.16	2.05	6952.05
		07/06/09	32.13	31.49	0.64	6952.07
		07/10/09	31.63	31.59	0.04	6952.12
		07/17/09	31.78	31.54	0.24	6952.12
		07/24/09	31.61	31.60	0.01	6952.12
		07/27/09	31.85	31.55	0.30	6952.10
		07/31/09	31.61	31.59	0.02	6952.13
		08/04/09	31.62	31.60	0.02	6952.12
		08/07/09	31.79	31.52	0.27	6952.13
		08/11/09	31.62	31.60	0.02	6952.12
		08/14/09	31.62	31.60	0.02	6952.12
		08/18/09	31.62	31.59	0.03	6952.12

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-01 (cont.)	6983.72	08/21/09	31.61	31.59	0.02	6952.13
		03/23/10	31.06	30.73	0.33	6952.91
	6982.15 ^{e, g}	10/03/11	38.31		Sheen	6943.84
		01/03/12	35.93		0.00	6946.22
		04/09/12	24.66		0.00	6957.49
		07/16/12	34.07		0.00	6948.08
		10/08/12	33.52		0.00	6948.63
	6982.26 j	01/07/13	33.08		0.00	6949.18
		01/07/13	33.05		0.00	6949.21
		06/24/13	33.06		0.00	6949.20
		07/20/13	32.79		0.00	6949.47
		07/25/13	32.85		0.00	6949.41
		08/08/13	32.70		0.00	6949.56
		08/22/13	32.66		0.00	6949.60
		09/17/13	32.45		0.00	6949.81
		09/26/13	32.39		0.00	6949.87
		10/10/13	32.25		0.00	6950.01
		10/24/13	32.20		0.00	6950.06
		11/07/13	32.20		0.00	6950.06
		11/14/13	31.99		0.00	6950.27
		11/26/13	32.35		0.00	6949.91
		12/16/13	31.95		0.00	6950.31
		01/20/14	31.88		0.00	6950.38
		02/10/14	31.82		0.00	6950.44
		04/09/14	32.02		0.00	6950.24
		07/17/14	31.48		0.00	6950.78
	[09/25/14	31.11		0.00	6951.15
	[10/28/15	26.65		0.00	6955.61
	[04/05/16	29.34		0.00	6952.92
	[12/14/16	30.10		0.00	6952.16
		08/14/17	30.23		0.00	6952.03
		02/20/18	30.77		0.00	6951.49
		08/09/18	31.26		0.00	6951.00
		02/21/19	30.97		0.00	6951.29
		09/23/19	29.99		0.00	6952.27
SFCMW-02	6984.45	04/22/09	33.12	32.87	0.25	6951.52
		04/28/09	32.88	32.55	0.33	6951.82
		05/11/09	32.79	32.40	0.39	6951.95

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-02 (cont.)	6984.45	06/26/09	32.86	32.24	0.62	6952.06
		06/30/09	32.89	32.21	0.68	6952.07
		07/10/09	32.80	32.20	0.60	6952.10
		07/17/09	32.71	32.23	0.48	6952.10
		07/21/09	32.71	32.23	0.48	6952.10
		07/24/09	32.61	32.25	0.36	6952.11
		07/27/09	32.59	32.26	0.33	6952.11
		07/31/09	32.54	32.27	0.27	6952.11
		08/07/09	32.42	32.28	0.14	6952.14
		08/14/09	32.40	32.30	0.10	6952.13
		08/21/09	32.36	32.31	0.05	6952.13
		03/23/10	31.62	31.52	0.10	6952.91
		10/03/11	38.60		0.00	6945.85
		01/03/12	36.27		0.00	6948.18
		04/09/12	35.00		0.00	6949.45
		07/16/12	34.35		0.00	6950.10
		10/08/12	33.77		0.00	6950.68
	6982.50 ^j	01/07/13	33.38		0.00	6949.12
		04/01/13	33.30		0.00	6949.20
		06/24/13	33.20		0.00	6949.30
		09/17/13	32.65		0.00	6949.85
		12/16/13	32.25		0.00	6950.25
		01/20/14	32.10		0.00	6950.40
		02/10/14	32.08		0.00	6950.42
		04/09/14	32.29		0.00	6950.21
		07/14/14	31.73		0.00	6950.77
		09/26/14	31.43		0.00	6951.07
		10/28/15	27.02		0.00	6955.48
		04/05/16	29.58		0.00	6952.92
		12/14/16	30.35		0.00	6952.15
		08/14/17	30.51		0.00	6951.99
		02/20/18	30.97		0.00	6951.53
		08/09/18	31.46		0.00	6951.04
		02/21/19	31.22		0.00	6951.28
		10/25/19	30.02		0.00	6952.48
SFCMW-03	6985.01	04/22/09	33.52	33.47	0.05	6951.53
		04/28/09	33.31		0.00	6951.70
		05/11/09	33.13	33.08	0.05	6951.92

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-03 (cont.)	6985.01	06/26/09	32.96	32.95	0.01	6952.06
		06/30/09	33.02	32.92	0.10	6952.07
		07/10/09	33.02	32.91	0.11	6952.07
		07/17/09	33.03	32.91	0.12	6952.07
		07/24/09	33.03	32.91	0.12	6952.07
		07/31/09	33.02	32.91	0.11	6952.07
		08/07/09	33.02	32.89	0.13	6952.09
		08/14/09	33.03	32.89	0.14	6952.09
		08/21/09	33.05	32.90	0.15	6952.07
		03/23/10	32.41	32.21	0.20	6952.75
		10/03/11	39.74		0.00	6945.27
		01/03/12	37.40		0.00	6947.61
	6983.67 e, g	04/09/12	36.09		0.00	6947.58
		07/16/12	35.45		0.00	6948.22
		10/08/12	35.12		0.00	6948.55
	6983.74 j	01/07/13	34.18		0.00	6949.56
		04/01/13	34.19		0.00	6949.55
		06/24/13	34.40		0.00	6949.34
		09/17/13	33.90		0.00	6949.84
		12/16/13	33.35		0.00	6950.39
		01/20/14	33.37		0.00	6950.37
		02/10/14	33.32		0.00	6950.42
		04/09/14	33.55		0.00	6950.19
		07/14/14	32.96		0.00	6950.78
		09/25/14	32.71		0.00	6951.03
		10/27/15	28.84		0.00	6954.90
		04/05/16	29.86		0.00	6953.88
		12/14/16	31.62		0.00	6952.12
		08/14/17	31.81		0.00	6951.93
		02/20/18	32.24		0.00	6951.50
		08/09/18	31.48		0.00	6952.26
		02/21/19	32.45		0.00	6951.29
		10/25/19	31.19		0.00	6952.55
SFCMW-04	6984.65	04/22/09	33.27	33.02	0.25	6951.57
		04/28/09	33.02	32.81	0.21	6951.79
		05/11/09	32.87	32.67	0.20	6951.93
		06/26/09	32.87	32.52	0.35	6952.04
		06/30/09	33.00	32.48	0.52	6952.04

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-04 (cont.)	6984.65	07/10/09	32.77	32.49	0.28	6952.09
		07/17/09	32.63	32.53	0.10	6952.10
		07/21/09	32.63	32.55	0.08	6952.08
		07/24/09	32.60	32.55	0.05	6952.09
		07/27/09	32.59	32.54	0.05	6952.10
		07/31/09	32.59	32.54	0.05	6952.10
		08/07/09	32.56	32.53	0.03	6952.11
		08/14/09	32.61	32.54	0.07	6952.09
		08/21/09	32.65	32.53	0.12	6952.09
		03/23/10	32.08	31.97	0.11	6952.65
		10/03/11		, i	sumed destroye	
		01/03/12		Plugged	and abandoned	
SFCMW-05	6983.85	04/22/09	34.11	31.57	2.54	6951.65
		04/28/09	33.93	31.46	2.47	6951.77
		05/11/09	33.65	31.35	2.30	6951.93
		06/26/09	33.38	31.27	2.11	6952.05
		06/30/09	33.37	31.26	2.11	6952.06
		07/02/09	33.33	31.29	2.04	6952.05
		07/06/09	33.20	31.31	1.89	6952.07
		07/10/09	31.63	31.59	0.04	6952.25
		07/17/09	33.16	32.30	0.86	6951.34
		07/24/09	33.22	31.29	1.93	6952.08
		07/27/09	33.17	31.29	1.88	6952.09
		07/31/09	32.56	31.49	1.07	6952.09
		08/04/09	32.46	31.52	0.94	6952.10
		08/07/09	32.77	31.41	1.36	6952.10
		08/14/09	33.14	31.32	1.82	6952.08
		08/21/09	31.78	31.76	0.02	6952.09
		03/23/10	31.78	30.95	0.83	6952.69
		10/03/11		• •	sumed destroye	
		01/03/12			and abandoned	
SFCMW-06	6981.02	04/22/09	29.36	29.30	0.06	6951.71
		04/28/09	29.26	29.20	0.06	6951.81
		05/11/09	29.14	29.07	0.07	6951.93
		06/26/09	29.18	28.93	0.25	6952.03
		06/30/09	29.15	28.90	0.25	6952.06
		07/10/09	29.12	28.88	0.24	6952.08
		07/17/09	29.15	28.88	0.27	6952.07

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-06 (cont.)	6981.02	07/24/09	29.15	28.86	0.29	6952.09
		07/31/09	29.08	28.90	0.18	6952.08
		08/07/09	28.96	28.92	0.04	6952.09
		08/14/09	28.97	28.93	0.04	6952.08
		08/21/09	28.98	28.95	0.03	6952.06
		03/23/10	28.25	28.24	0.01	6952.78
		07/18/11				
		through			Dry	
		08/08/11				
		08/22/11	38.21		0.00	6942.81
		09/06/11	37.88		0.00	6943.14
		10/03/11	36.71		0.00	6944.31
		10/17/11	36.49		0.00	6944.53
		11/01/11	35.85		0.00	6945.17
		11/15/11	35.36		0.00	6945.66
		01/03/12	34.44		0.00	6946.58
		04/09/12	33.28		0.00	6947.74
	6980.77 e, g	07/16/12	32.10		0.00	6948.67
		10/08/12	31.65		0.00	6949.12
	6980.41 j	01/07/13	31.30		0.00	6949.11
		04/01/13	31.13		0.00	6949.28
		06/24/13	31.07		0.00	6949.34
		09/17/13	30.37		0.00	6950.04
		12/16/13	30.15		0.00	6950.26
		01/20/14	30.03		0.00	6950.38
		02/10/14	30.00		0.00	6950.41
		04/08/14	30.25		0.00	6950.16
		07/14/14	29.35		0.00	6951.06
		09/26/14	29.36		0.00	6951.05
		10/27/15	25.85		0.00	6954.56
		04/04/16	27.83		0.00	6952.58
		12/14/16	28.49		0.00	6951.92
		08/14/17	28.53		0.00	6951.88
		02/20/18	29.00		0.00	6951.41
		08/09/18	29.27		0.00	6951.14
		02/21/19	29.17		0.00	6951.24
SFCMW-07	6979.65	05/04/09	29.12		0.00	6950.53
		05/11/09	28.88	27.42	1.46	6951.87

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-07 (cont.)	6979.65	06/26/09	29.06	27.18	1.88	6952.00
, ,		06/30/09	29.03	27.15	1.88	6952.03
		07/10/09	28.65	27.27	1.38	6952.04
		07/17/09	28.67	27.30	1.37	6952.01
		07/21/09	28.74	27.29	1.45	6952.00
		07/24/09	28.70	27.30	1.40	6952.00
		07/31/09	28.66	27.31	1.35	6952.00
		08/07/09	28.54	27.32	1.22	6952.03
		08/14/09	28.56	27.30	1.26	6952.04
		08/21/09	28.53	27.30	1.23	6952.04
		11/07/09	27.23		0.00	6952.42
		03/23/10	28.06	26.81	1.25	6952.53
		12/07/10				
		through			Dry	
		10/03/11				
		01/03/12	31.62		0.00	6948.03
		04/09/12	32.37		0.00	6947.28
		07/16/12	31.58		0.00	6948.07
		10/08/12	30.84		0.00	6948.81
	6980.42 j	01/09/13	30.67		0.00	6949.75
		04/01/13	31.41		0.00	6949.01
		06/24/13	31.38		0.00	6949.04
		09/17/13	30.64		0.00	6949.78
		12/16/13	30.21		0.00	6950.21
		01/20/14	30.08		0.00	6950.34
		02/10/14	30.00		0.00	6950.42
		04/08/14	30.23		0.00	6950.19
		07/14/14	29.61		0.00	6950.81
		09/26/14	29.45		0.00	6950.97
		10/27/15	26.01		0.00	6954.41
		04/04/16	27.85		0.00	6952.57
		12/14/16	28.49		0.00	6951.93
		08/14/17	28.64		0.00	6951.78
		02/19/18	28.90		0.00	6951.52
		08/08/18	29.38		0.00	6951.04
		02/20/19	29.27		0.00	6951.15
		09/24/19	28.26		0.00	6952.16
SFCMW-08	6978.89	05/04/09	29.85		0.00	6949.04

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-08 (cont.)	6978.89	05/11/09	26.79		0.00	6952.10
		05/28/09	26.81		0.00	6952.08
		06/26/09	26.65		0.00	6952.24
		07/20/09	26.63		0.00	6952.26
		08/06/09	26.65		0.00	6952.24
		08/17/09	26.56		0.00	6952.33
		03/23/10	25.38		0.00	6953.51
		09/27/10				
		through			Dry	
		10/03/11				
		01/03/12	31.99		0.00	6946.90
		04/09/12	30.85		0.00	6948.04
		07/16/12	30.34		0.00	6948.55
		10/08/12	30.91		0.00	6947.98
		01/07/13	30.47		0.00	6948.42
		04/01/13	30.50		0.00	6948.39
		06/24/13	30.20		0.00	6948.69
		09/17/13	28.48		0.00	6950.41
		12/16/13	29.23		0.00	6949.66
		01/20/14	29.34		0.00	6949.55
		02/10/14	29.37		0.00	6949.52
		04/07/14	29.63		0.00	6949.26
		07/14/14	28.05		0.00	6950.84
		10/27/15	24.70		0.00	6954.19
		04/07/16	26.53		0.00	6952.36
		12/14/16	27.74		0.00	6951.15
		08/14/17	27.73		0.00	6951.16
		02/20/18	28.44		0.00	6950.45
		08/08/18	27.80		0.00	6951.09
		02/20/19	28.41		0.00	6950.48
SFCMW-09	6977.29	05/04/09	26.20		0.00	6951.09
		05/11/09	26.19		0.00	6951.10
		05/28/09	26.30		0.00	6950.99
		06/26/09	26.31		0.00	6950.98
		07/20/09	26.16		0.00	6951.13
		08/07/09	26.12		0.00	6951.17
		08/17/09	25.71		0.00	6951.58
		03/23/10	24.66		0.00	6952.63

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-09 (cont.)	6977.29	09/27/10	26.33		0.00	6950.96
, , ,		10/25/10	26.71		0.00	6950.58
		12/06/10	28.41		0.00	6948.88
		03/09/11	29.22		0.00	6948.07
		06/14/11		Well va	ult obstructed	
		10/03/11			Dry	
		01/03/12		Plugged	and abandoned	
SFCMW-09D	6977.81	03/23/10	25.22		0.00	6952.59
		09/27/10	32.52		0.00	6945.29
		10/25/10	34.82		0.00	6942.99
		12/06/10	35.59		0.00	6942.22
		03/09/11	36.76		0.00	6941.05
		06/14/11	37.11		0.00	6940.70
		10/03/11	33.31		0.00	6944.50
		01/03/12	30.56		0.00	6947.25
		04/09/12	29.38		0.00	6948.43
	6975.05 j	07/16/12	28.85		0.00	6948.96
		10/08/12	26.25		0.00	6951.56
		01/07/13	25.75		0.00	6952.06
		04/01/13	25.81		0.00	6952.00
		06/24/13	25.75		0.00	6952.06
		09/17/13	25.09		0.00	6952.72
		12/16/13	24.80		0.00	6953.01
		01/20/13	24.75		0.00	6953.06
		02/10/13	24.61		0.00	6953.20
		04/07/13	24.93		0.00	6952.88
		07/14/13	23.98		0.00	6953.83
		12/14/16	23.20		0.00	6954.61
		08/14/17	23.25		0.00	6954.56
SFCMW-10	6980.85	08/17/09	28.93	28.70	0.23	6952.09
		03/23/10	29.05	27.58	1.47	6952.90
		12/06/10				
		through			Dry	
		08/08/11				
		08/22/11	38.30		0.00	6942.55
		09/06/11	37.89		0.00	6942.96
		09/19/11	37.30		0.00	6943.55
		10/03/11	36.73		0.00	6944.12

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-10 (cont.)	6980.85	10/17/11	36.36		0.00	6944.49
, ,		11/01/11	35.75		0.00	6945.10
		11/15/11	35.35		0.00	6945.50
		01/03/12	34.33		0.00	6946.52
		04/09/12	33.11		0.00	6947.74
		07/16/12	32.54		0.00	6948.31
		10/08/12	32.16		0.00	6948.69
	6980.50 j	01/07/13	31.25		0.00	6949.25
		04/01/13	31.25		0.00	6949.25
		06/24/13	31.21		0.00	6949.29
		07/20/13	31.02		0.00	6949.48
		07/25/13	31.10		0.00	6949.40
		08/08/13	31.05		0.00	6949.45
		08/22/13	30.90		0.00	6949.60
		09/17/13	30.65		0.00	6949.85
		09/26/13	30.70		0.00	6949.80
		10/10/13	30.50		0.00	6950.00
		10/24/13	30.49		0.00	6950.01
		11/07/13	30.40		0.00	6950.10
		11/14/13	30.30		0.00	6950.20
		11/26/13	30.60		0.00	6949.90
		12/16/13	30.20		0.00	6950.30
		01/20/14	30.10		0.00	6950.40
		02/10/14	30.05		0.00	6950.45
		04/09/14	30.30		0.00	6950.20
		07/17/14	29.70		0.00	6950.80
		09/25/14	29.42		0.00	6951.08
		10/27/15	25.11		0.00	6955.39
		04/05/16	27.62		0.00	6952.88
		12/14/16	28.30		0.00	6952.20
		08/14/17	28.42		0.00	6952.08
		02/20/18	28.95		0.00	6951.55
		08/08/18	29.48		0.00	6951.02
		02/22/19	29.20		0.00	6951.30
		09/23/19	28.25		0.00	6952.25
SFCMW-11	6977.91	08/17/09	25.71		0.00	6952.20
		11/07/09	25.74		0.00	6952.17
		03/23/10	25.24	25.23	0.01	6952.68

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-11 (cont.)	6977.91	09/27/10	33.29	33.28	0.01	6944.63
		10/25/10		I.	Dry	
		12/06/10			Dry	
		03/09/11	34.52		0.00	6943.39
		06/14/11	33.61		0.00	6944.30
		10/03/11	33.54		0.00	6944.37
		01/03/12	30.71		0.00	6947.20
		04/09/12	30.16		0.00	6947.75
		07/16/12	29.56		0.00	6948.35
		10/08/12	29.09		0.00	6948.82
		01/07/13	28.75		0.00	6949.16
		04/01/13	28.65		0.00	6949.26
		06/24/13	28.60		0.00	6949.31
		09/17/13	28.14		0.00	6949.77
		12/16/13	27.70		0.00	6950.21
		01/20/14	27.60		0.00	6950.31
		02/10/14	27.54		0.00	6950.37
		04/08/14	27.74		0.00	6950.17
		07/14/14	27.10		0.00	6950.81
		10/27/15	23.60		0.00	6954.31
		04/06/16	25.44		0.00	6952.47
		12/14/16	26.02		0.00	6951.89
		08/14/17	26.15		0.00	6951.76
		02/19/18	26.38		0.00	6951.53
		08/08/18	26.86		0.00	6951.05
		02/20/19	26.78		0.00	6951.13
SFCMW-12	6977.87	08/17/09	25.73		0.00	6952.14
		11/07/09	25.76		0.00	6952.11
		03/23/10	25.23		0.00	6952.64
		09/27/10				
		through			Dry	
		10/03/11		T	Г	T
		01/03/12	30.81		0.00	6947.06
		04/09/12	30.07		0.00	6947.80
		07/16/12	29.35		0.00	6948.52
	60.7	10/08/12	28.96		0.00	6948.91
	6977.79 j	01/07/13	28.56		0.00	6949.23
		04/01/13	28.37		0.00	6949.42

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFCMW-12 (cont.)	6977.79 j	06/24/13	28.35		0.00	6949.44
		09/17/13	27.94		0.00	6949.85
		12/17/13	27.57		0.00	6950.22
		01/20/14	27.44		0.00	6950.35
		02/10/14	27.38		0.00	6950.41
		04/08/14	27.58		0.00	6950.21
		07/14/14	26.96		0.00	6950.83
		10/27/15	23.47		0.00	6954.32
		04/04/16	25.30		0.00	6952.49
		12/14/16	25.90		0.00	6951.89
		08/14/17	26.00		0.00	6951.79
		02/19/18	26.24		0.00	6951.55
		08/08/18	26.74		0.00	6951.05
		02/20/19	26.65		0.00	6951.14
SFRMW-01	6971.80	03/23/10	19.30		0.00	6952.50
		09/27/10	25.94		0.00	6945.86
		10/25/10				
		through			Dry	
		09/19/11				
		10/03/11	27.11		0.00	6944.69
		10/17/11	26.86		0.00	6944.94
		11/01/11	26.36		0.00	6945.44
		11/15/11	25.93		0.00	6945.87
		01/03/12	25.05		0.00	6946.75
		04/09/12	23.87		0.00	6947.93
		07/16/12	23.15		0.00	6948.65
		10/08/12	22.74		0.00	6949.06
		01/07/13	22.51		0.00	6949.29
		04/01/13	22.37		0.00	6949.43
		06/24/13	22.32		0.00	6949.48
		09/17/13	21.93		0.00	6949.87
		12/16/13	21.50		0.00	6950.30
		07/14/14	20.95		0.00	6950.85
SFRMW-01D	6972.05	09/27/10	25.60		0.00	6946.45
		10/25/10	27.01		Sheen	6945.04
		12/06/10	28.10		0.00	6943.95
		03/09/11	29.12		0.00	6942.93
		06/14/11	29.94		0.00	6942.11

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SFRMW-01D (cont.)	6972.05	10/03/11	27.11		0.00	6944.94
		01/03/12	25.63		0.00	6946.42
		04/09/12	23.98		0.00	6948.07
		07/16/12	23.15		0.00	6948.90
		10/08/12	22.90		0.00	6949.15
		01/07/13	22.42		0.00	6949.63
		04/01/13	22.50		0.00	6949.55
		06/24/13	22.55		0.00	6949.50
		09/17/13	22.22		0.00	6949.83
		12/16/13	21.32		0.00	6950.73
		07/14/14	20.95		0.00	6951.10
SFRMW-02	6976.74	09/27/10	26.71		0.00	6950.03
		10/25/10	27.35		0.00	6949.39
		12/06/10	28.36		0.00	6948.38
		03/09/11	29.46		0.00	6947.28
		06/14/11			Dry	
		10/03/11	28.00		0.00	6948.74
		01/03/12	27.82		0.00	6948.92
		04/09/12	27.38		0.00	6949.36
		07/16/12	26.36		0.00	6950.38
		10/08/12	25.64		0.00	6951.10
		01/07/13	26.56		0.00	6950.18
		04/01/13	26.50		0.00	6950.24
		06/24/13	26.00		0.00	6950.74
		09/17/13	25.70		0.00	6951.04
		12/16/13	25.90		0.00	6950.84
		01/20/14	25.95		0.00	6950.79
		02/10/14	25.93		0.00	6950.81
		04/07/14	25.98		0.00	6950.76
		07/14/14	23.79		0.00	6952.95
SVE-1	6982.01	07/10/09	30.07	29.62	0.45	6952.28
		07/17/09	29.95		0.00	6952.06
		07/20/09	29.82		0.00	6952.19
		08/06/09	29.84	29.80	0.04	6952.20
		08/18/09	29.90	29.78	0.12	6952.20
		09/14/09	30.24	29.68	0.56	6952.19
		09/29/09	30.09	29.64	0.45	6952.26
		11/08/09	30.01	29.44	0.57	6952.43

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SVE-1 (cont.)	6982.01	11/13/09	29.96	29.39	0.57	6952.48
		03/23/10	29.15	29.09	0.06	6952.91
	6981.91 e	09/27/10		Not gau	ged or sampled	
		12/06/10			Dry	
		10/03/11	37.62		0.00	6944.29
		01/03/12	32.13		0.00	6949.78
		04/09/12	31.98		0.00	6949.93
		07/16/12	31.38		0.00	6950.53
		10/08/12	31.41		0.00	6950.50
		01/07/13	31.82		0.00	6950.09
		04/01/13	32.37		0.00	6949.54
		06/24/13	32.20		0.00	6949.71
		07/20/13	32.04		0.00	6949.87
		09/17/13	31.75		0.00	6950.16
		11/07/13	31.50		0.00	6950.41
		12/16/13	31.75		0.00	6950.16
		01/20/14	31.45		0.00	6950.46
		02/10/14	31.43		0.00	6950.48
		04/08/14	31.61		0.00	6950.30
		07/14/14	31.08		0.00	6950.83
		09/26/14	29.92		0.00	6951.99
		10/26/15	24.59		0.00	6957.32
		04/04/16	28.70		0.00	6953.21
		12/14/16	29.29		0.00	6952.62
		08/14/17	29.03		0.00	6952.88
		02/21/18	30.09		0.00	6951.82
		08/09/18	30.76		0.00	6951.15
		02/21/19	30.39		0.00	6951.52
		09/23/19	29.44		0.00	6952.47
SVE-2	6980.80	10/05/09	28.76		0.00	6952.04
		11/08/09	28.52		0.00	6952.28
		03/23/10	27.96		0.00	6952.84
		09/28/10				
		through			Dry	
		10/03/11		1	I	T
		01/03/12	34.37		0.00	6946.43
		04/09/12	33.17		0.00	6947.63
		07/16/12	32.58		0.00	6948.22

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SVE-2 (cont.)	6980.80	10/08/12	32.00		0.00	6948.80
		01/07/13	31.54		0.00	6949.26
		04/01/13	31.56		0.00	6949.24
		06/24/13	31.52		0.00	6949.28
		07/25/13	31.40		0.00	6949.40
		08/08/13	31.30		0.00	6949.50
		08/22/13	31.30		0.00	6949.50
		09/17/13	31.00		0.00	6949.80
		09/26/13	30.90		0.00	6949.90
		10/10/13	30.80		0.00	6950.00
		10/24/13	30.80		0.00	6950.00
		11/14/13	30.30		0.00	6950.50
		11/26/13	30.90		0.00	6949.90
		12/16/13	30.50		0.00	6950.30
		01/20/14	30.40		0.00	6950.40
		02/10/14	30.42		0.00	6950.38
		04/08/14	30.75		0.00	6950.05
		07/14/14	30.06		0.00	6950.74
		09/25/14	29.63		0.00	6951.17
		10/27/15	25.54		0.00	6955.26
		04/04/16	27.99		0.00	6952.81
		12/14/16	28.59		0.00	6952.21
		08/14/17	28.62		0.00	6952.18
		02/21/18	29.40		0.00	6951.40
		08/09/18	29.84		0.00	6950.96
		02/21/19	29.59		0.00	6951.21
SVE-3	6981.10	10/04/09	29.05		0.00	6952.05
		11/08/09	28.81		0.00	6952.29
		03/23/10	29.35	27.90	1.45	6952.84
	6980.98 ^e	09/27/10		Not gaug	ged or sampled	
		12/06/10			Dry	
		10/03/11	37.01	36.40	0.61	6944.43
		10/17/11	33.98	33.90	0.08	6947.06
		11/01/11	34.43		Sheen	6946.55
		11/15/11	34.06	34.03	0.03	6946.94
		11/28/11	33.28	33.25	0.03	6947.72
		01/03/12	32.39	32.38	0.01	6948.60
		04/09/12	31.68	31.66	0.02	6949.32

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SVE-3 (cont.)	6980.98 ^e	07/16/12	30.38	30.36	0.02	6950.62
		10/08/12	32.07	32.00	0.07	6948.96
		01/07/13	31.58		Sheen	6949.40
		04/01/13	31.70		Sheen	6949.28
		06/24/13	31.83		Sheen	6949.15
		07/20/13	31.47		0.00	6949.51
		09/17/13	31.20		0.00	6949.78
		10/10/13	31.40		0.00	6949.58
		11/07/13	31.40		0.00	6949.58
		12/16/13	29.80		0.00	6951.18
		01/20/14	29.81		0.00	6951.17
		02/10/14	30.67		0.00	6950.31
		04/08/14	31.00		0.00	6949.98
		07/14/14	30.27		0.00	6950.71
		09/26/14	29.84		0.00	6951.14
		10/27/15	26.63		0.00	6954.35
		04/04/16	27.94		0.00	6953.04
		12/15/16	28.54		0.00	6952.44
		08/14/17	28.66		0.00	6952.32
		02/21/18	29.44		0.00	6951.54
		08/10/18	29.02		0.00	6951.96
		02/22/19	29.69		0.00	6951.29
		09/25/19	28.68		0.00	6952.30
SVE-4	6984.66	11/08/09	21.07		0.00	6963.59
		11/13/09	21.05		0.00	6963.61
		03/23/10	22.19		0.00	6962.47
		09/28/10	20.61		0.00	6964.05
		12/06/10	20.94		0.00	6963.72
		03/09/11	21.90		0.00	6962.76
		06/14/11	23.06		0.00	6961.60
		10/03/11	20.76		0.00	6963.90
		01/03/12	21.01		0.00	6963.65
		04/09/12	22.48		0.00	6962.18
		07/16/12	21.79		0.00	6962.87
		10/08/12	20.66		0.00	6964.00
		01/07/13	21.10		0.00	6963.56
		04/01/13	22.65		0.00	6962.01
		06/24/13	22.86		0.00	6961.80

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SVE-4 (cont.)	6984.66	07/20/13	22.34		0.00	6962.32
		09/17/13	21.50		0.00	6963.16
		11/07/13	20.85		0.00	6963.81
		12/16/13	21.30		0.00	6963.36
		01/20/14	21.93		0.00	6962.73
		02/10/14	22.30		0.00	6962.36
		04/07/14	23.65		0.00	6961.01
		07/14/14	22.80		0.00	6961.86
		10/26/15	19.39		0.00	6965.27
		04/07/16	21.21		0.00	6963.45
		12/15/16		Ozone emi	itter stuck in w	ell
		08/14/17		Ozone emi	itter stuck in w	ell
		08/08/18		Ozone emi	itter stuck in w	ell
		02/21/19		Ozone emi	itter stuck in w	ell
SVE-5	6982.69	11/08/09	30.40	30.38	0.02	6952.31
		03/23/10	31.29	29.45	1.84	6952.78
		09/27/10		Not gaug	ged or sampled	
		11/17/10	40.05		0.00	6942.64
		12/06/10				
		through			Dry	
		06/14/11				
		10/03/11	38.91		0.00	6943.78
		01/03/12	36.46		0.00	6946.23
		04/09/12	35.12		0.00	6947.57
		07/16/12	34.48		0.00	6948.21
		10/08/12	33.90		0.00	6948.79
		01/07/13	33.41		0.00	6949.28
		04/01/13	33.33		0.00	6949.36
		06/24/13	33.38		0.00	6949.31
		09/17/13	32.95		0.00	6949.74
		12/16/13	32.20		0.00	6950.49
		01/20/14	32.21		0.00	6950.48
		02/10/14	32.02		0.00	6950.67
		04/08/14	33.22		0.00	6949.47
		07/14/14	31.81		0.00	6950.88
		10/26/15	26.25		0.00	6956.44
		04/05/16	29.65		0.00	6953.04
		12/14/16	29.86		0.00	6952.83

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SVE-5 (cont.)	6982.69	08/14/17	29.93		0.00	6952.76
		02/21/18	NM		0.00	NM
		08/08/18	31.21		0.00	6951.48
		02/21/19	30.77		0.00	6951.92
SVE-6	6982.50	09/27/10		Not gaug	ged or sampled	
		12/07/10				
		through			Dry	
		10/03/11				
		01/03/12	34.80		0.00	6947.70
		04/09/12	33.92		0.00	6948.58
		07/16/12	32.75		0.00	6949.75
		10/08/12	33.71		0.00	6948.79
		01/07/13	32.53		0.00	6949.97
		04/01/13	33.15		0.00	6949.35
		06/24/13	33.27		0.00	6949.23
		07/20/13	33.09		0.00	6949.41
		09/17/13	32.80		0.00	6949.70
		11/07/13	32.40		0.00	6950.10
		12/16/13	32.20		0.00	6950.30
		01/20/14	32.42		0.00	6950.08
		02/10/14	32.10		0.00	6950.40
		04/07/14	32.48		0.00	6950.02
		07/14/14	31.78		0.00	6950.72
		10/28/15		We	ll blocked	
		04/07/16	29.61		0.00	6952.89
		12/16/16	30.31		0.00	6952.19
		02/21/18	30.94		0.00	6951.56
		08/08/18	31.44		0.00	6951.06
		02/21/19			ll blocked	
SVE-7	6983.01	09/27/10		Not gaug	ged or sampled	
		12/06/10				
		through			Dry	
		10/03/11				
		01/03/12	34.74		0.00	6948.27
		04/09/12	33.85		0.00	6949.16
		07/16/12	33.21		0.00	6949.80
		10/08/12	34.20		0.00	6948.81
		01/07/13	32.49		0.00	6950.52

	Top of Casing		Depth to	Depth to	NAPL	Groundwater	
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b	
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)	
SVE-7 (cont.)	6983.01	04/01/13	32.18		0.00	6950.83	
		06/24/13	33.59		0.00	6949.42	
		09/17/13	33.20		0.00	6949.81	
		12/16/13	32.70		0.00	6950.31	
		01/20/14	32.68		0.00	6950.33	
		02/10/14	32.51		0.00	6950.50	
		04/07/14	32.71		0.00	6950.30	
		07/14/14	32.18		0.00	6950.83	
		10/28/15		We	ll blocked		
		04/07/16	30.01		0.00	6953.00	
		12/16/16	30.71		0.00	6952.30	
		08/14/17	Well blocked				
		02/21/18		We	ll blocked		
		08/08/18	31.86		0.00	6951.15	
		02/21/19	31.62		0.00	6951.39	
SVE-8	6980.08	10/25/09	27.98		0.00	6952.10	
		03/23/10	27.55		0.00	6952.53	
		09/28/10					
		through			Dry		
		10/03/11			Ī		
		01/03/12	33.55		0.00	6946.53	
		04/09/12	32.32		0.00	6947.76	
		07/16/12	31.71		0.00	6948.37	
		10/08/12	31.23		0.00	6948.85	
		01/07/13	30.85		0.00	6949.23	
		04/01/13	30.37		0.00	6949.71	
		06/24/13	30.63		0.00	6949.45	
		09/17/13	30.21		0.00	6949.87	
		12/16/13	29.43		0.00	6950.65	
		01/20/14	29.62		0.00	6950.46	
		02/10/14	29.60		0.00	6950.48	
		04/07/14	29.90		0.00	6950.18	
		07/14/14	28.25		0.00	6951.83	
		10/26/15	25.59		0.00	6954.49	
		04/06/16	27.42		0.00	6952.66	
		12/15/16	28.06		0.00	6952.02	
		08/14/17	27.70		0.00	6952.38	
		02/20/18	28.52		0.00	6951.56	

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SVE-8 (cont.)	6980.08	08/08/18	29.00		0.00	6951.08
, ,		02/20/19	28.86		0.00	6951.22
SVE-9	6978.26	10/24/09	26.39	26.24	0.15	6951.98
		10/31/09	27.66	25.72	1.94	6952.06
		11/07/09	27.42	25.82	1.60	6952.04
		03/23/10	26.65	25.41	1.24	6952.54
	6978.13 ^e	09/27/10		Not gau	ged or sampled	
		12/06/10			Dry	
		10/03/11		Su	mp water	
		01/03/12	29.82		0.00	6948.31
		04/09/12	30.70		0.00	6947.43
		07/16/12	29.98		0.00	6948.15
		10/08/12	29.21		0.00	6948.92
		01/07/13	29.03		0.00	6949.10
		04/01/13	29.01		0.00	6949.12
		06/24/13	28.80		0.00	6949.33
		09/17/13	28.20		0.00	6949.93
		12/16/13	27.87		0.00	6950.26
		01/20/14	27.75		0.00	6950.38
		02/10/14	27.50		0.00	6950.63
		04/10/14	27.98		0.00	6950.15
		07/14/14	23.25		0.00	6954.88
		10/26/15	23.87		0.00	6954.26
		04/07/16	25.57		0.00	6952.56
		12/15/16	26.12		0.00	6952.01
		08/14/17	26.24		0.00	6951.89
		08/08/18	27.04		0.00	6951.09
		02/20/19	26.93		0.00	6951.20
SVE-10D	6980.49 f	12/07/10	37.27		0.00	6943.22
		03/09/11	38.92		0.00	6941.57
		06/14/11	38.73		0.00	6941.76
		07/18/11	36.53		0.00	6943.96
		07/22/11	36.67		0.00	6943.82
		07/25/11	36.86		0.00	6943.63
		08/01/11	37.31		0.00	6943.18
		08/08/11	36.45		0.00	6944.04
		08/22/11	37.75		0.00	6942.74
		09/06/11	35.90		0.00	6944.59

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SVE-10D (cont.)	6980.49 f	09/19/11	36.50		0.00	6943.99
		10/03/11	36.12		0.00	6944.37
		10/17/11	33.82		0.00	6946.67
		11/01/11	35.47		0.00	6945.02
		11/15/11	34.75		0.00	6945.74
		01/03/12	33.40		0.00	6947.09
		04/09/12	32.81		0.00	6947.68
		07/16/12	32.16		0.00	6948.33
	6979.49 f,g	10/08/12	29.92		0.00	6949.57
		01/07/13	29.94		0.00	6949.55
		04/01/13	30.26		0.00	6949.23
		06/24/13	30.19		0.00	6949.30
		09/17/13	29.75		0.00	6949.74
		12/16/13	29.30		0.00	6950.19
		01/20/14	29.07		0.00	6950.42
		02/10/14	29.20		0.00	6950.29
		04/07/14	29.29		0.00	6950.20
	6979.06 m	07/14/14	28.24		0.00	6950.82
		10/26/15	24.59		0.00	6954.47
		04/07/16	27.40		0.00	6951.66
		12/16/16	28.89		0.00	6950.17
		08/14/17	27.13		0.00	6951.93
		02/19/18	27.42		0.00	6951.64
		08/08/18	27.94		0.00	6951.12
		02/20/19		We	ll blocked	
SVE-11D	6981.57 f	12/06/10	41.16		0.00	6940.41
		03/09/11	40.95		0.00	6940.62
		06/14/11	40.32		0.00	6941.25
		07/18/11	39.60		0.00	6941.97
		07/22/11	40.08		0.00	6941.49
		07/25/11	40.05		0.00	6941.52
		08/01/11	40.44		0.00	6941.13
		08/08/11	38.90		0.00	6942.67
		08/22/11	39.40		0.00	6942.17
		09/06/11	37.80		0.00	6943.77
		09/19/11	38.44		0.00	6943.13
		10/03/11	37.72		0.00	6943.85
		10/17/11	36.81		0.00	6944.76

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
SVE-11D (cont.)	6981.57 f	11/01/11	34.47		0.00	6947.10
		11/15/11	36.10		0.00	6945.47
		01/03/12	34.23		0.00	6947.34
		04/09/12	33.97		0.00	6947.60
		07/16/12	32.90		0.00	6948.67
		10/08/12	32.75		0.00	6948.82
		01/07/13	31.45		0.00	6950.12
		04/01/13	32.11		0.00	6949.46
		06/24/13	32.28		0.00	6949.29
		07/25/13	32.18		0.00	6949.39
		08/08/13	32.10		0.00	6949.47
		08/22/13	32.02		0.00	6949.55
		09/17/13	31.80		0.00	6949.77
		09/26/13	31.80		0.00	6949.77
		10/10/13	31.70		0.00	6949.87
		10/24/13	31.55		0.00	6950.02
		11/14/13	31.30		0.00	6950.27
		11/26/13	31.50		0.00	6950.07
		12/16/13	31.25		0.00	6950.32
		01/20/14	31.10		0.00	6950.47
		02/10/14	31.10		0.00	6950.47
		04/07/14	31.34		0.00	6950.23
		07/14/14	30.77		0.00	6950.80
		10/26/15	25.87		0.00	6955.70
		04/05/16	28.59		0.00	6952.98
		12/15/16	29.23		0.00	6952.34
		08/15/17	29.35		0.00	6952.22
		02/21/18	30.10		0.00	6951.47
		08/08/18	30.58		0.00	6950.99
		02/22/19	30.23		0.00	6951.34
		09/23/19	29.32		0.00	6952.25
TBAMW-03	6981.08 k	03/24/14	26.90		0.00	6954.18
		04/07/14	26.10		0.00	6954.98
		07/14/14	25.93		0.00	6955.15
TMW-06	6962.99	04/01/13	13.75		0.00	6949.24
		06/24/13	13.61		0.00	6949.38
		09/17/13	13.18		0.00	6949.81
		12/16/13	12.70		0.00	6950.29

	Top of Casing		Depth to	Depth to	NAPL	Groundwater		
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b		
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)		
TMW-06 (cont.)	6962.99	01/20/14	12.66		0.00	6950.33		
		02/10/14	12.60		0.00	6950.39		
		04/07/14	12.76		0.00	6950.23		
		07/14/14	12.18		0.00	6950.81		
		10/28/15		No	ot gauged			
		12/14/15			ot gauged			
TMW-06D	6963.08	04/01/13	13.82		0.00	6949.26		
		06/24/13	13.70		0.00	6949.38		
		09/17/13	13.12		0.00	6949.96		
		12/16/13	12.73		0.00	6950.35		
		01/20/14	12.74		0.00	6950.34		
		02/10/14	12.65		0.00	6950.43		
		04/07/14	12.85		0.00	6950.23		
		07/14/14	12.18		0.00	6950.90		
		10/28/15		No	ot gauged			
		12/14/15		Not gauged				
TWN-1	6976.74 k	03/24/14	26.41		0.00	6950.33		
		04/07/14	26.55		0.00	6950.19		
		07/14/14	25.86		0.00	6950.88		
		10/26/15	23.02		0.00	6953.72		
		04/04/16	23.75		0.00	6952.99		
		12/14/16	24.67		0.00	6952.07		
		08/14/17	24.91		0.00	6951.83		
		02/19/18	25.23		0.00	6951.51		
		08/08/18	25.62		0.00	6951.12		
		02/20/19	25.55		0.00	6951.19		
TWN-2	6977.55 k	03/24/14	27.22		0.00	6950.33		
		04/07/14	27.34		0.00	6950.21		
		07/14/14	26.66		0.00	6950.89		
		09/24/14	26.57		0.00	6950.98		
		10/26/15	23.31		0.00	6954.24		
		04/04/16	25.01		0.00	6952.54		
		12/14/16	25.52		0.00	6952.03		
		08/14/17	25.69		0.00	6951.86		
		02/20/18	26.45		0.00	6951.10		
		08/08/18	25.99		0.00	6951.56		
		02/20/19	26.37		0.00	6951.18		
		09/24/19	25.38		0.00	6952.17		

	Top of Casing		Depth to	Depth to	NAPL	Groundwater
Well	Elevation ^a	Date	Water	NAPL	Thickness	Elevation ^b
Name	(ft msl)	Measured	(ft btoc)	(ft btoc)	(feet)	(ft msl)
TWN-3	6977.16 k	03/24/14	26.86		0.00	6950.30
		04/07/14	27.04		0.00	6950.12
		07/14/14	26.29		0.00	6950.87
		09/24/14	26.21		0.00	6950.95
		10/26/15	27.85		0.00	6949.31
		04/06/16	24.61		0.00	6952.55
		12/14/16	25.14		0.00	6952.02
		08/14/17	26.35		0.00	6950.81
		02/20/18	25.56		0.00	6951.60
		08/08/18	26.10		0.00	6951.06
		02/20/19	26.01		0.00	6951.15
		09/23/19	25.02		0.00	6952.14
TWS-1	6979.93 k	03/24/14	29.65		0.00	6950.28
		04/07/14	29.78		0.00	6950.15
		07/14/14	29.11		0.00	6950.82
		09/25/14	28.77		0.00	6951.16
		10/27/15	24.67		0.00	6955.26
		04/06/16	27.21		0.00	6952.72
		12/14/16	27.77		0.00	6952.16
		08/14/17	29.32		0.00	6950.61
		02/21/18	28.49		0.00	6951.44
		08/09/18	28.83		0.00	6951.10
		02/22/19	28.61		0.00	6951.32
		09/23/19	27.64		0.00	6952.29
TWS-2	6984.35 k	03/24/14	33.90		0.00	6950.45
		04/07/14	34.00		0.00	6950.35
		07/14/14	33.73		0.00	6950.62
		10/27/15	29.23		0.00	6955.12
		04/07/16	31.02		0.00	6953.33
		12/14/16	31.90		0.00	6952.45
		08/14/17	31.24		0.00	6953.11
		02/21/18	32.50		0.00	6951.85
		08/08/18	33.36		0.00	6950.99
		02/21/19	31.78		0.00	6952.57
TWS-3	6982.51 k	03/24/14	32.23		0.00	6950.28
		04/07/14	32.31		0.00	6950.20
		07/14/14	32.02		0.00	6950.49
		10/27/15	27.51		0.00	6955.00

Well Name	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Depth to NAPL (ft btoc)	NAPL Thickness (feet)	Groundwater Elevation ^b (ft msl)
TWS-3 (cont.)	6982.51 k	04/07/16	29.30		0.00	6953.21
, , ,		12/14/16	30.28		0.00	6952.23
		08/14/17	29.98		0.00	6952.53
		02/21/18	30.86		0.00	6951.65
		08/08/18	31.65		0.00	6950.86
		02/21/19	31.14		0.00	6951.37
TWS-4	6982.74 k	03/24/14	32.40		0.00	6950.34
		04/07/14	32.57		0.00	6950.17
		07/14/14	32.05		0.00	6950.69
		09/24/14	31.41		0.00	6951.33
		10/27/15	26.64		0.00	6956.10
		04/05/16	29.34		0.00	6953.40
		12/14/16	29.78		0.00	6952.96
		08/14/17	29.32		0.00	6953.42
		02/21/18	31.02		0.00	6951.72
		08/09/18	31.80		0.00	6950.94
		02/21/19	31.25		0.00	6951.49
		09/24/19	30.30		0.00	6952.44

Notes:

GWE = Top of casing elevation - (depth to water - (NAPL thickness \times 0.75)).

ft msl = Feet above mean sea level

ft btoc = Feet below top of casing

NAPL = Non-aqueous phase liquid

NA = Not available

NM = Not measured

^a Surveyed by Surveying Control, November, 2009, unless otherwise noted.

^b Groundwater elevation (GWE) corrected for NAPL thickness using the following equation:

^c Data provided by Intera, August 25, 2009.

d Cannot be determined due to unknown top of casing elevation.

^e Surveyed by Surveying Control, August, 2010.

[†] Surveyed by Surveying Control, December, 2010.

g Survey completed with former remediation system. Elevation reduced due to removal of appurtenances

^h Surveyed by Surveying Control, February 2012.

Surveyed by Wayjohn Surveying, Inc., February 2013.

^k Surveyed by Surveying Control, Inc., April, 2014.

^m Surveyed by Surveying Control, Inc., August, 2014.

Monitor	Date			Ethyl-	Total				Total
Well	Sampled	Benzene	Toluene	benzene	Xylenes	MTBE	EDB	EDC	Naphthalenes
NMWQCC Standards		5	1,000	700	620	100	0.05	5	30
CMW-1	08/14/17	120	< 5.0	5.7	22	< 5.0	<0.0094 a	< 5.0	< 50
CMW-1	02/20/18	150	<2.5	4.9	<3.8	<2.5	0.051 ^a	2.7	<25
CMW-1	08/09/18	340	4.0	<2.0	<3.0	<2.0	0.37 ^a	< 2.0	7.7
CMW-1	02/21/19	570	51	26	34	<1.0	<0.010 ^a	5.3	10
CMW-1	09/24/19	150	4.9	3.7	6.6	<1.0	0.25 ^a	<1.0	4.7
CMW-2	02/20/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0096 a	<1.0	<10
CMW-3R	08/14/17	<10	140	57	1,800	<10	<0.0093 a	<10	710
CMW-3R	02/20/18	1.1	9.8	3.1	50	<1.0	<0.0094 a	<1.0	29.2
CMW-3R	08/09/18	<1.0	150	52	1,400	<1.0	<0.0094 a	<1.0	550
CMW-3R	02/21/19	120	230	130	2,200	<10	0.11 a	<10	940
CMW-3R	09/24/19	<1.0	<1.0	<1.0	31	<1.0	<1.0	<1.0	19.5
CMW-4	08/14/17	<2.0	<2.0	2.7	5.3	<2.0	<0.0094 a	< 2.0	5.0
CMW-4	02/20/18	<2.0	24	160	220	<2.0	<0.0095 a	< 2.0	87
CMW-4	08/10/18	2.5	160	400	770	<2.0	<0.0092 a	5.1	145
CMW-4	02/20/19	<1.0	7.8	32	82	<1.0	<0.0095 a	<1.0	16
CMW-4	09/23/19	<1.0	40	240	420	<1.0	<0.0096 a	<1.0	82
CMW-5	02/21/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.010 ^a	<1.0	<10
MW-1R	08/14/17	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0092 a	<1.0	<10.0
MW-1R	02/20/18	300	2,300	1,200	12,000	<10	0.033	<10	1,030
MW-1R	08/08/18	240	1,700	630	8,900	<10	<0.0094 a	<10	920
MW-1R	02/21/19	860	2,200	1,500	12,000	<10	<0.0093 a	<10	1,080
MW-1R	09/24/19	1,700	6,200	2,300	17,000	<10	0.52 ^a	<10	1,210
MW-2	02/21/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-4R	08/14/17	<2.0	<2.0	<2.0	<3.0	<2.0	<0.0094 a	<2.0	58
MW-4R	02/21/18	1,400	9,100	860	6,000	<10	1.6 ^a	<10	468

Monitor	Date		m 1	Ethyl-	Total) (TD)	EDD	ED G	Total
Well	Sampled	Benzene	Toluene	benzene	Xylenes	MTBE	EDB	EDC	Naphthalenes
MW-4R	08/08/18	790	4,800	480	3,400	<25	1.2 a	<25	200
MW-4R	02/21/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-4R	09/24/19	1,800	13,000	1,300	9,200	<1.0	2.2 a	<1.0	597
MW-5	08/15/17	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 ^a	<1.0	<10
MW-5	02/22/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
MW-5	08/09/18	4.2	<1.0	27	<1.5	<1.0	0.033 ^a	<1.0	6.2
MW-5	02/21/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-6	08/14/17	<10	<10	70	750	<10	0.015 ^a	<10	960
MW-6	02/20/18	<10	33	70	2,000	<10	0.061 ^a	<10	690
MW-6	08/09/18	< 5.0	7.5	210	310	<10	0.044 ^a	< 5.0	473
MW-6	02/21/19	<1.0	5.0	180	230	<1.0	0.043 ^a	<1.0	180
MW-6	09/23/19	< 2.0	<2.0	150	35	< 2.0	<2.0	< 2.0	71
MW-7	08/14/17	< 2.0	<2.0	< 2.0	<3.0	< 2.0	<0.0094 a	< 2.0	98
MW-7	02/20/18	< 2.0	<2.0	< 2.0	<3.0	< 2.0	<0.0094 a	< 2.0	69
MW-7	08/09/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0093 a	<1.0	4.1
MW-7	02/20/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	24.9
MW-8	02/20/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-9	02/20/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.010 a	<1.0	<10
MW-10	02/20/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-11	08/14/17	<1.0	<1.0	46	350	<1.0	0.84 ^a	1.4	640
MW-11	02/22/18	< 5.0	< 5.0	110	1,600	< 5.0	3.6 a	< 5.0	445
MW-11	08/08/18	< 5.0	< 5.0	84	730	< 5.0	1.5 ^a	< 5.0	442
MW-11	02/20/19	< 5.0	< 5.0	28	210	< 5.0	1.4 ^a	< 5.0	480
MW-11	09/23/19	<2.5	< 5.0	43	150	< 5.0	0.74 ^a	< 5.0	411
MW-12	02/22/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 ^a	<1.0	<10
MW-13	08/14/17	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0093 a	<1.0	<10

Monitor Well	Date Sampled	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	EDB	EDC	Total Naphthalenes
MW-13	02/19/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-13	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 ^a	<1.0	<10
MW-13	02/20/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 ^a	<1.0	<10
MW-14	08/14/17	<1.0	<1.0	<1.0	8.4	<1.0	<0.0093 a	2.6	128
MW-14	02/22/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	1.5	28.9
MW-14	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 ^a	<1.0	<10
MW-14	02/21/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 ^a	<1.0	<10
MW-15	08/14/17	1.6	<1.0	<1.0	<1.5	<1.0	<0.0094 ^a	28	<10
MW-15	02/19/18	1.9	<1.0	<1.0	<1.5	<1.0	<0.0095 ^a	28	<10
MW-15	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	40	<10
MW-15	02/20/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	22	<10
MW-15	09/24/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	26	<4.0
MW-17	02/22/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
MW-18	08/15/17	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
MW-18	02/21/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-18	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
MW-18	02/21/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-19	02/21/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
MW-20	08/14/17	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-20	02/21/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-20	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
MW-20	02/22/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
SFCMW-01	08/15/17	3.6	< 5.0	32	19	< 5.0	<0.0095 a	< 5.0	470
SFCMW-01	02/20/18	<2.5	<2.5	54	53	<2.5	<0.0095 a	3.7	600
SFCMW-01	08/09/18	<2.5	<2.5	51	32	<2.5	<0.0094 a	<2.5	560

Monitor	Date	_		Ethyl-	Total				Total
Well	Sampled	Benzene	Toluene	benzene	Xylenes	MTBE	EDB	EDC	Naphthalenes
SFCMW-01	02/21/19	< 5.0	< 5.0	95	110	< 5.0	<0.0094 a	6.0	540
SFCMW-01	09/23/19	<2.5	< 5.0	37	15	< 5.0	< 5.0	< 5.0	490
SFCMW-02	08/15/17	2.6	< 5.0	< 5.0	<7.5	< 5.0	<0.0093 a	< 5.0	411
SFCMW-02	02/20/18	3.4	<2.5	< 2.5	<3.8	<2.5	<0.0095 ^a	< 2.5	349
SFCMW-02	08/09/18	2.4	< 2.0	< 2.0	< 3.0	< 2.0	<0.0094 a	< 2.0	391
SFCMW-02	02/21/19	< 2.0	<2.0	< 2.0	<3.0	<2.0	<0.0095 ^a	<2.0	302
SFCMW-02	10/25/19	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	367
SFCMW-03	08/15/17	< 5.0	< 5.0	< 5.0	<7.5	< 5.0	<0.0094 a	< 5.0	360
SFCMW-03	02/20/18	< 2.0	<2.0	< 2.0	< 3.0	<2.0	<0.0095 ^a	<2.0	292
SFCMW-03	08/09/18	2.9	<1.0	<1.0	<1.5	<2.0	<0.0093 a	<1.0	204
SFCMW-03	02/20/19	1.6	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	147
SFCMW-03	10/25/19	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	188
SFCMW-06	08/15/17	6.1	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	9.4
SFCMW-06	02/20/18	4.9	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	6.2
SFCMW-06	08/08/18	5.7	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	4.6
SFCMW-06	02/21/19	2.1	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
SFCMW-07	08/14/17	<1.0	<1.0	<1.0	<1.5	<1.0	0.35	1.2	<10
SFCMW-07	02/19/18	<1.0	<1.0	<1.0	<1.5	<1.0	0.44	1.1	<10
SFCMW-07	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	0.19	<1.0	<10
SFCMW-07	02/21/19	<1.0	<1.0	<1.0	<1.5	<1.0	0.13	<1.0	<10
SFCMW-07	09/24/19	<1.0	<1.0	<1.0	<1.5	<1.0	0.021 a	<1.0	<4.0
SFCMW-08	02/20/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
SFCMW-10	08/15/17	65	20	<20	180	<20	0.17 a	<10	4,500
SFCMW-10	02/20/18	72	13	15	350	<10	0.21 a	<10	4,700
SFCMW-10	08/08/18	23	<10	<10	45	<10	0.061 a	<10	4,200
SFCMW-10	02/21/19	48	<10	<10	48	<10	0.078 a	<10	2,450
SFCMW-10	09/23/19	83	<10	<10	62	<10	<10	<10	3,010

Monitor Well	Date Sampled	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	EDB	EDC	Total Naphthalenes
SFCMW-11	08/14/17	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0092 a	<1.0	<10
SFCMW-11	02/19/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 ^a	<1.0	<10
SFCMW-11	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0096 ^a	<1.0	<10
SFCMW-11	02/21/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
SFCMW-12	08/14/17	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
SFCMW-12	02/19/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
SFCMW-12	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
SFCMW-12	02/22/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0098 a	<1.0	<10
SVE-1	08/14/17	<1.0	<1.0	2.4	27	<1.0	<0.0093 a	<1.0	42
SVE-1	02/21/18	<1.0	<1.0	<1.0	8.3	<1.0	<0.010 a	<1.0	12
SVE-1	08/09/18	<1.0	<1.0	1.4	20	<1.0	<0.0095 a	<1.0	43
SVE-1	02/22/19	<2.0	<2.0	<2.0	15	<2.0	<0.0094 a	<2.0	55
SVE-1	09/23/19	<2.0	<2.0	<2.0	<3.0	<2.0	<2.0	< 2.0	<8.0
SVE-2	08/14/17	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0093 a	<1.0	<10
SVE-2	02/21/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0096 a	<1.0	<10
SVE-2	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
SVE-2	02/22/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
SVE-3	08/15/17	35	100	150	1,300	< 5.0	0.076 a	< 5.0	980
SVE-3	02/21/18	30	110	240	2,200	< 5.0	0.047 ^a	< 5.0	720
SVE-3	08/10/18	12	40	120	1,100	< 5.0	0.015 a	< 5.0	640
SVE-3	02/22/19	5.8	35	110	620	<10	<0.0094 a	<10	840
SVE-3	09/25/19	20	81	200	1,500	<10	<10	<10	730
SVE-5	02/21/18	<1.0	<1.0	12	120	<1.0	<0.0094 a	<1.0	384
SVE-6	02/21/18	<2.0	<2.0	92	19	< 2.0	0.016 a	<2.0	400
SVE-8	02/20/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10

Monitor	Date	_		Ethyl-	Total				Total
Well	Sampled	Benzene	Toluene	benzene	Xylenes	MTBE	EDB	EDC	Naphthalenes
SVE-10D	02/19/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0096 a	<1.0	<10
SVE-11D	02/21/18	<1.0	<1.0	<1.0	6.1	<1.0	<0.0095 ^a	<1.0	201
SVE-11D	09/23/19	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<4.0
TWN-1	08/14/17	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 ^a	<1.0	<10
TWN-1	02/19/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
TWN-1	08/08/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 a	<1.0	<10
TWN-1	02/20/19	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0094 a	<1.0	<10
TWN-2	08/14/17	270	210	26	1,600	<10	23	<10	1,130
TWN-2	02/20/18	3.4	1.6	<1.0	26	<1.0	0.53 ^a	14	57
TWN-2	08/08/18	1.4	<1.0	<1.0	4.6	<1.0	0.15 ^a	8.6	5.7
TWN-2	02/22/19	<1.0	<1.0	<1.0	<1.5	<1.0	0.060 a	15	<10
TWN-2	09/24/19	3.1	<1.0	<1.0	<1.5	<1.0	0.14 ^a	6.3	<4.0
TWN-3	08/14/17	1,200	400	<20	1,200	<20	9.1 ^a	38	120
TWN-3	02/19/18	1.4	<1.0	<1.0	<1.5	<1.0	0.20 a	<1.0	<10
TWN-3	08/08/18	310	140	86	900	<1.0	3.8 ^a	33	100
TWN-3	02/20/19	170	31	29	170	<1.0	1.5 ^a	19	43
TWN-3	09/23/19	29	1.2	1.9	12	<1.0	4.4 ^a	1.6	5.0
TWS-1	08/15/17	<1.0	<1.0	<1.0	1.7	<1.0	<0.0094 a	<1.0	9.8
TWS-1	02/21/18	<1.0	<1.0	<1.0	12	<1.0	<0.0093 a	<1.0	24.2
TWS-1	08/08/18	<1.0	<1.0	<1.0	9.9	<1.0	<0.0095 a	<1.0	22.7
TWS-1	02/21/19	<1.0	<1.0	<1.0	8.2	<1.0	<0.0095 a	<1.0	27.8
TWS-1	09/23/19	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<4.0
TWS-2	02/21/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 ^a	<1.0	<10
TWS-3	02/21/18	<1.0	<1.0	<1.0	<1.5	<1.0	<0.0095 ^a	<1.0	<10
TWS-4	08/14/17	300	220	340	930	<10	<0.0094 a	<10	87 H
TWS-4	02/21/18	260	410	470	1,300	<5.0	0.039 ^a	7.2	167

Monitor	Date			Ethyl-	Total				Total
Well	Sampled	Benzene	Toluene	benzene	Xylenes	MTBE	EDB	EDC	Naphthalenes
TWS-4	08/08/18	120	170	220	530	< 5.0	0.014 ^a	9.4	98
TWS-4	02/20/19	140	270	230	510	< 5.0	<0.0095 a	7.4	89

760

2,200

< 1.0

0.056 a

6.9

308

Notes:

Bold indicates concentration that exceed the New Mexico Water Quality Control Commission (NMWQCC) standard.

1,600

410

All concentrations reported in micrograms per liter (µg/L).

All samples analyzed in accordance with EPA method 8260B, unless otherwise noted.

09/24/19

^a Analyzed in accordance with EPA Method 504.1.

Analyzed in accordance with EPA Method 8310.

^c Analyzed in accordance with EPA Method 8021 (HBC, 1999).

^d Data from RT Hicks Consulting (October 2002).

^e Laboratory results provided by Santa Fe County subcontractor.

MTBE = Methyl tertiary-butyl ether

EDB = 1,2-Dibromoethane

TWS-4

EDC = 1,2-Dichloroethane

NA = Not Applicable

NAPL = Nonaqueous-phase liquid

TABLE 3. SUMMARY OF DISSOLVED METALS, ANIONS, AND METHANE SANTA FE COUNTY JUDICIAL COMPLEX, SANTA FE, NEW MEXICO

Monitor Well	Date Sampled	Sulfate	Sulfide	Nitrate (as N)	Dissolved Iron	Dissolved Manganese	Methane
CMW-1	9/24/2019	85	0.199	18	1.1	2.2	< 0.0100
CMW-3R	9/24/2019	130	< 0.0500	36	0.12	0.093	< 0.0100
CMW-4	9/23/2019	110	< 0.0500	22	1.3	1.5	NA
MW-1R	9/24/2019	<2.5	< 0.0500	1.0	15	31	0.440
MW-4R	9/24/2019	47	< 0.0500	< 0.50	0.36	4.9	< 0.0100
MW-6	9/23/2019	120	< 0.0500	<1.0	2.9	6.9	NA
MW-11	9/23/2019	200	< 0.0500	1.6	0.12	3.8	< 0.0100
MW-15	9/24/2019	96	< 0.0500	0.11	0.032	0.51	NA
SFCMW-01	9/23/2019	75	< 0.0500	<1.0	0.68	7.0	0.0251
SFCMW-02	10/25/2019	79	< 0.0500	3.8	0.022	3.4	NA
SFCMW-03	10/25/2019	100	< 0.0500	8.1	< 0.020	0.14	NA
SFCMW-07	9/24/2019	70	< 0.0500	< 0.10	0.030	3.1	NA
SFCMW-10	9/23/2019	79	< 0.0500	1.8	0.14	10	< 0.0100
SVE-1	9/23/2019	110	< 0.0500	3.4	0.10	7.4	NA
SVE-3	9/25/2019	29	< 0.0500	<1.0	2.5	6.9	< 0.0100
SVE-11D	9/23/2019	130	< 0.0500	37	< 0.020	2.3	NA
TWN-2	9/24/2019	210	< 0.0500	0.28	0.023	1.8	NA
TWN-3	9/23/2019	390	< 0.0500	12	< 0.020	0.42	< 0.0100
TWS-1	9/23/2019	69	< 0.0500	23	0.19	0.022	NA
TWS-4	9/24/2019	< 0.50	< 0.0500	0.29	2.6	7.1	< 0.0100
NMWQCC	Standards	600		10	1.0	0.2	

Notes:

Bold indicates concentration that exceeds the appplicable NMWQCC standard.

All concentrations reported in milligrams per liter (mg/L).

N = Nitrogen

NA = Not analyzed per the approved work plan.

NMWQCC = New Mexico Water Quality Control Commission

Well	Date	SpC	Temp		DO	ORP
Number	Sampled	(µS/cm)	(°C)	pН	(mg/L)	(mV)
CMW-1	02/20/18	965	11.8	7.35	NM	NM
	08/09/18	1,302	18.3	7.24	NM	NM
	02/21/19	1,247	12.1	7.69	NM	NM
	09/24/19	2,086	17.4	7.04	3.01	-55.9
CMW-2	02/20/18	1,355	11.0	7.06	NM	NM
	02/21/19	NM	NM	NM	NM	NM
CMW-3R	02/20/18	1,824	14.5	6.94	NM	NM
	08/09/18	1,242	18.4	7.14	NM	NM
	02/21/19	2,194	12.4	7.14	NM	NM
	09/24/19	3,293	16.7	6.79	4.39	16.8
CMW-4	02/20/18	1,643	12.6	7.45	NM	NM
	08/09/18	1,251	18.4	7.14	NM	NM
	02/21/19	2,197	14.9	7.35	NM	NM
	09/23/19	2,451	17.6	6.86	2.49	-4.4
CMW-5	02/21/18	NM	NM	NM	NM	NM
	02/21/19	NM	NM	NM	NM	NM
MW-1R	02/20/18	2,747	13.0	6.94	NM	NM
	08/09/18	2,703	17.7	6.89	NM	NM
	02/21/19	3,233	8.3	6.87	NM	NM
	09/24/19	3,798	17.3	6.58	0.00	-127.4
MW-2	02/21/18	7,110	14.0	6.95	NM	NM
	02/22/19	NM	NM	NM	NM	NM
MW-4R	02/21/18	2,379	13.7	7.33	NM	NM
	02/21/19	2,020	9.4	7.03	NM	NM
	09/24/19	1,754	16.5	6.68	0.05	-58.3
MW-5	02/22/18	746	13.5	7.53	NM	NM
	08/09/18	1,270	17.5	6.81	NM	NM
	02/21/19	1,112	13.5	7.34	NM	NM
MW-6	02/20/18	NM	15.7	6.54	NM	NM
	08/09/18	902	18.0	6.82	NM	NM
	02/22/19	1,080	11.9	7.12	NM	NM
	09/23/19	1,053	16.5	6.86	1.41	-72.6
MW-7	02/20/18	515	13.6	7.15	NM	NM
	08/09/18	412	18.1	6.71	NM	NM
	02/21/19	578	9.8	7.80	NM	NM

Well	Date	SpC	Temp		DO	ORP
Number	Sampled	(µS/cm)	(°C)	pН	(mg/L)	(mV)
MW-8	02/20/18	1,162	13.7	7.15	NM	NM
	02/22/19	NM	NM	NM	NM	NM
MW-9	02/20/18	1,053	12.6	7.48	NM	NM
	02/22/19	NM	NM	NM	NM	NM
MW-10	02/20/18	579	12.5	7.70	NM	NM
	02/22/19	NM	NM	NM	NM	NM
MW-11	02/22/18	1,178	14.5	11.28*	NM	NM
	08/08/18	1,373	19.4	11.60*	NM	NM
	02/20/19	952	10.3	9.87	NM	NM
	09/23/19	1,093	17.4	7.73	0.03	-78.4
MW-12	02/22/18	859	12.11	7.88	NM	NM
	02/20/19	NM	NM	NM	NM	NM
MW-13	02/19/18	742	15.3	7.91	NM	NM
	08/08/18	114	17.5	7.06	NM	NM
	02/20/19	1,334	14.6	7.56	NM	NM
MW-14	02/22/18	2,090	15.9	12.00*	NM	NM
	08/08/18	1,043	17.6	7.60	NM	NM
	02/20/19	1,362	14.8	7.00	NM	NM
MW-15	02/19/17	1,092	15.8	7.05	NM	NM
	08/08/18	1,202	17.1	6.95	NM	NM
	02/20/19	1,132	13.8	7.42	NM	NM
	09/24/19	1,126	15.6	7.13	3.91	75.6
MW-17	02/22/18	1,550	15.6	7.09	NM	NM
	02/22/19	NM	NM	NM	NM	NM
MW-18	02/21/18	2,058	13.9	7.26	NM	NM
	08/09/18	1,851	21.1	7.18	NM	NM
	02/22/19	2,036	14.2	7.36	NM	NM
MW-19	02/21/18	3,692	15.4	7.15	NM	NM
	02/22/19	NM	NM	NM	NM	NM
MW-20	02/21/18	763	13.2	7.77	NM	NM
	08/09/18	743	17.2	7.69	NM	NM
	02/21/19	790	13.3	7.44	NM	NM
SFCMW-01	02/20/18	1,384	15.9	13.84	NM	NM
	08/09/18	1,419	17.3	7.01	NM	NM
	02/21/19	1,308	16.5	7.03	NM	NM
	09/23/19	1,398	17.4	6.94	0.00	-168.9

Well	Date	SpC	Тетр		DO	ORP
Number	Sampled	(µS/cm)	(°C)	pН	(mg/L)	(mV)
SFCMW-02	02/20/18	1,087	15.7	7.01	NM	NM
	08/09/18	1,163	18.6	7.08	NM	NM
	02/21/19	1,065	16.1	6.93	NM	NM
	10/25/19	837.7	14.7	7.01	2.69	88
SFCMW-03	02/20/18	930	14.9	7.08	NM	NM
	08/09/18	1,074	19.4	7.00	NM	NM
	02/21/19	1,084	14.6	7.89	NM	NM
	10/25/19	989.3	15.9	7.31	2.78	102
SFCMW-06	02/20/18	1,450	15.4	7.54	NM	NM
	08/08/18	1,459	22.3	7.56	NM	NM
	02/21/19	1,492	14.6	7.56	NM	NM
SFCMW-07	02/19/18	801	16.2	7.47	NM	NM
	08/08/18	730	21.0	7.36	NM	NM
	02/20/19	934	10.8	6.57	NM	NM
	09/24/19	802	15.5	7.31	0.74	68.1
SFCMW-08	02/20/18	3,800	15.3	7.68	NM	NM
	02/22/19	NM	NM	NM	NM	NM
SFCMW-10	02/20/18	NM	NM	NM	NM	NM
	08/08/18	1,371	23.3	6.52	NM	NM
	02/22/19	1,346	13.8	7.45	NM	NM
	09/23/19	1,418	18.2	6.42	0.05	21.1
SFCMW-11	02/19/18	6,950	15.9	6.95	NM	NM
	08/08/18	1,271	18.7	7.11	NM	NM
	02/20/19	950	14.1	6.38	NM	NM
SFCMW-12	02/19/18	2,455	15.5	7.04	NM	NM
	08/08/18	2,556	16.3	6.94	NM	NM
	02/20/19	1,942	13.0	5.97	NM	NM
SVE-1	02/21/18	6,930	13.7	12.73*	NM	NM
	08/10/18	1,048	17.6	7.19	NM	NM
	02/22/19	2,067	14.2	6.84	NM	NM
	09/23/19	2,396	17.5	6.70	1.53	20.4
SVE-2	02/21/18	NM	NM	NM	NM	NM
	08/09/18	2,427	18.5	6.82	NM	NM
	02/21/19	>3999	12.6	6.93	NM	NM
SVE-3	02/21/18	3,193	15.9	6.81	NM	NM
	08/10/18	2,686	18.9	6.99	NM	NM

Well	Date	SpC	Temp		DO	ORP
Number	Sampled	(µS/cm)	(°C)	pН	(mg/L)	(mV)
SVE-3 (cont.)	02/22/19	1,730	15.2	6.42	NM	NM
	09/25/19	1,608	16.7	6.49	0.07	-117.28
SVE-5	02/21/18	NM	NM	NM	NM	NM
	02/22/19	NM	NM	NM	NM	NM
SVE-6	02/21/18	1,021	14.5	7.03	NM	NM
	02/22/18	NM	NM	NM	NM	NM
SVE-7	02/21/18	NM	NM	NM	NM	NM
	02/22/18	NM	NM	NM	NM	NM
SVE-8	02/20/18	2,550	14.5	7.38	NM	NM
	02/22/19	NM	NM	NM	NM	NM
SVE-9	02/20/18	NM	NM	NM	NM	NM
	02/22/19	NM	NM	NM	NM	NM
SVE-10D	02/19/18	865	15.3	7.60	NM	NM
	02/22/19	NM	NM	NM	NM	NM
SVE-11D	02/21/18	1,874	14.9	7.82	NM	NM
	02/22/19	NM	NM	NM	NM	NM
	09/23/19	2,107	17.5	6.58	2.60	50.2
TWN-1	02/19/18	2,111	15.8	6.92	NM	NM
	08/08/18	1,786	17.3	6.77	NM	NM
	02/20/19	2,064	12.3	6.11	NM	NM
TWN-2	02/20/18	1,591	15.5	11.70*	NM	NM
	08/08/18	650	16.6	9.60	NM	NM
	02/21/19	1,566	14.3	7.04	NM	NM
	09/24/19	1,503	16.5	7.11	0.09	38.5
TWN-3	02/19/18	1,599	15.9	7.94	NM	NM
	08/08/18	1,470	18.1	7.21	NM	NM
	02/20/19	1,637	12.1	7.63	NM	NM
	09/23/19	1,952	16.4	6.75	5.68	103.4
TWS-1	02/21/18	2,989	13.6	7.02	NM	NM
	08/09/18	2,097	20.8	6.93	NM	NM
	02/22/19	2,087	14.4	7.28	NM	NM
	09/23/19	2,015	16.9	6.88	2.86	58.2
TWS-2	02/21/18	1,043	12.8	7.48	NM	NM
	02/22/19	NM	NM	NM	NM	NM
TWS-3	02/21/18	1,089	13.5	7.51	NM	NM
	02/22/19	NM	NM	NM	NM	NM

Well Number	Date Sampled	SpC (µS/cm)	Temp (°C)	рН	DO (mg/L)	ORP (mV)
TWS-4	02/21/18	926	13.5	10.69*	NM	NM
	08/09/18	673	17.6	9.93*	NM	NM
	02/21/19	1,186	12.8	8.41	NM	NM
	09/24/19	1,652	17.9	6.64	0.00	-56.4

Notes:

SpC = Specific conductivity measured in microsiemens per centimeter (μs/cm)

Temp = Temperature in degrees Celcius

DO = Dissolved oxygen measured in milligrams per liter (mg/L)

ORP = Oxidation reduction potential measured in millivolts (mV)

NM = Not Measured.

* ORC-A in well prior to purging and sampling

TABLE 5. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS BENZENE PLUME DELINEATION - CAPITAL 66 SANTA FE COUNTY JUDICIAL COMPLEX, SANTA FE, NEW MEXICO

Sample ID	Date Sampled	Benzene	Toluene	Ethyl- benzene	Xylenes	MTBE	EDB	EDC	Total Naphthalenes
SB-C66-01	12-Mar-20	<1.0	<1.0	<1.0	<1.5	<1.0	< 0.0094	<1.0	<4.0
SB-C66-02	12-Mar-20	<1.0	<1.0	<1.0	<1.5	<1.0	< 0.0093	<1.0	<4.0
SB-C66-03	12-Mar-20	<1.0	<1.0	<1.0	<1.5	<1.0	< 0.0093	<1.0	<4.0
SB-C66-04	12-Mar-20	<1.0	<1.0	<1.0	<1.5	<1.0	< 0.0093	<1.0	<4.0
SB-C66-05	12-Mar-20	<1.0	<1.0	<1.0	<1.5	<1.0	< 0.0095	<1.0	<4.0
SB-C66-06	12-Mar-20	<1.0	<1.0	<1.0	3.2	<1.0	< 0.0093	<1.0	<4.0
SB-C66-07	11-Mar-20	<1.0	<1.0	<1.0	<1.5	<1.0	< 0.0093	<1.0	<4.0
SB-C66-08	11-Mar-20	<1.0	<1.0	<1.0	<1.5	<1.0	< 0.0094	<1.0	<4.0
NMWQCO	C Standards	5	1,000	700	620	100	0.05	5	30

Notes:

All samples analyzed in accordance with EPA Method 8260B, unless otherwise noted.

EDB analyzed in accordance with EPA Method 504.1.

All concentrations reported in micrograms per liter (µg/L).

MTBE = Methyl tertiary-butyl ether

EDB = Ethylene dibromide

EDC = Ethylene dichloride

NMWQCC = New Mexico Water Quality Control Commission

TABLE 6. GROUNDWATER MONITORING AND PERFORMANCE ASSESSMENT SANTA FE COUNTY JUDICIAL COMPLEX, SANTA FE, NEW MEXICO

Purpose	Sampling Frequency	Sampling Point	Analyses
Routine groundwater monitoring for trend analysis	Quarterly	Select monitoring wells	VOCs by EPA 8260B, EDB by EPA 504.1, Sulfate, Dissolved Iron and Dissolved Manganese by EPA 6010, and Nitrate by EPA 300.0
Monitor suitability for in-situ bioremediation by sulfate reduction	Semi-Annual	Select monitoring wells	Methane by RSK-175 and Hydrogen Sulfide by SM 4500S ₂ -H
Microbial analysis and biodegradation	Semi-Annual	Bio-Trap TM Samplers in select monitoring wells	QuantArray, CENSUS-DNA
Water levels for potentiomentric maps	Quarterly	Site wells	Groundwater level gauging

Notes:

VOCs = Volatile Organic Compounds

EDB = 1,2-dibromoethane

EPA = U.S. Environmental Protection Agency

SM = Standard Method

TABLE 7. OPTIMIZATION AND CONTINGENCY PLAN SANTA FE COUNTY JUDICIAL COMPLEX, SANTA FE, NEW MEXICO

	Optimum	Timeframe for	Means of Data	Contingency
Goal	Condition	Goal Attainment	Collection	Plan
Inject Remediation Amendments	According to the design	During Mobilization	Measuring vessel, weighing, flowmeters, package quantities.	Adjust amount of water in the mixture. Adjust injection mass per point and point spacing. Adjust injection pressure and/or flowrate. Adjust Spacing.
Demonstrate remediation.	Declining solute concentrations, increased microbial counts.	Throughout remediation	Geochemical and VOC concentrations in groundwater during groundwater monitoring. Increased microbial populations in groundwater based on Biotrap TM Samplers.	Localized subsequent injections in recalcitrant areas.
Plume Stability	Stable to declining "hot spots" post treatment, both in area and contaminant mass.	Throughout remediation	Quarterly groundwater monitoring.	Localized subsequent injections to prevent contaminant migration in groundwater.

APPENDIX A
AMENDMENT DOSAGE

PETROFIX APPLICATION RATES SANTA FE COUNTY JUDICIAL COMPLEX, SANTA FE, NEW MEXICO

							D (E	N. 1. 6		Application		A 31 /		The state of the s	Electron Acceptor	Electron Acceptor
Dl.,,,,, o	A	E	T.	Thisleness	Valores	Done	PetroFix	Number of	Rate	Rate	Total Water		Application	Electron	Dose, Total,	Dose, Bulk,
Plume	Area	From	To	Thickness	Volume	Dose	Total Mass	Points	PetroFix	PetroFix	Volume		Rate Water	Acceptor	Bulk	Per Point
D. U.	SF	ft bgs	ft bgs	Feet	CY	lb/cy	lbs	20	lb/point	lb/ft	gal	gal/point	gal/ft	0.104	lb	lb
De Vargas	2,200	25	40	15	1222	5.56	6,800	20	340	22.7	24,686	1,234	82	Sulfate	340	17
Capital 66 - CMW-1	500	20	25	5	93	8.64	800	3	267	53.3	1,870	623	125	Sulfate	40	13
Capital 66 - CMW-3R	700	20	32	12	311	5.14	1,600	4	400	33.3	6,284	1,571	131	Sulfate	80	20
Capital 66 - CMW-4	200	20	32	12	89	13.5	1,200	2	600	50.0	1,795	898	75	Sulfate	60	30
Design Center	5,000	32	62	30	5,556	8.86	49,220	13	3,786	126	112,208	8,631	288	Nitrate, Sulfate	2,461	189
SFCJC - Hot Spot	1,000	28	40	12	444	7.2	3,200	5	640	53	8,977	1,795	150	Nitrate, Sulfate	160	32
SFCJC - Plume	7,000	28	40	12	3,111	4.4	13,690	34	403	34	62,836	1,848	154	Nitrate, Sulfate	685	20
Total	16,600				10,826		76,510	81			218,656				3,826	
Inputs						Notes:			Nitrate/Sulfa	te Electron Ac	cceptor Blend:		Nitrate Free	Electron Accepto	r Blend:	
Target Effective Pore Volume	50%					CY	cubic foot		CAS#	Chemical	-		CAS#	Chemical		
Effective Porosity	20%					ft	foot		7631-99-4	Sodium Nitra	te, 50% by weight	ght	778-80-5	Potassium Sulfate	e, 50% by weigl	nt
Cubic feee in a cubic yard	27					gal	gallon		7783-20-2	Ammonium S	ulfate, 50% by	weight	7783-20-2	Ammonium Sulfa	ate, 50% by wei	ght
Gallons in a cubic yard	201.974					LB	pound					-			•	-
Electron Acceptor Dose	0.05			lb per pound o	f Petrofix	SF	square foot									

APPENDIX A – AMENDMENTS DOSAGE

SFCJC

PROJECT LOCATION
Santa Fe County Judicial Complex
Santa Fe, NM, 87501
UNITED STATES

Areas

Name	Area	VTI	Dose	Product
SFCJC - Plume	7,000.0 sq.ft	12.0ft	4.37lbs/cy	13,600lbs
SFCJC - Hot Spot	1,000.0 sq.ft	12.0ft	7.2lbs/cy	3,200 lbs
De Vargas	2,200.0sq.ft	15.0ft	5.56lbs/cy	6,800 lbs
Capital 66 - CMW-4	200.0sq.ft	12.0ft	13.5lbs/cy	1,200 lbs
Capital 66 - CMW-3R	700.0sq.ft	12.0ft	5.14lbs/cy	1,600 lbs
Design Center	5,000.0sq.ft	30.0ft	8.86lbs/cy	49,200lbs
Capital 66 - CMW-1	500.0sq.ft	5.0ft	8.64lbs/cy	800lbs

Total Product 76,400 lbs

APPENDIX A – AMENDMENTS DOSAGE

SFCJC – Hot Spot

REPORTED		NAPL Present?	No	
Ground Water Concentrations (µg/L)		NAPLPresents		
Benzene	58	Isopropylbenzene	0	
Toluene	17	Naphthalenes	3,772	
Ethylbenzene	15	МТВЕ	0	
Xylenes	137	TPH-GRO	8,000	
Trimethylbenzenes	0	TPH-DRO	0	
Butylbenzene	0	Sum of Dissolved Concentrations:	11,772	

SFCJC - Plume

REPORTED Ground Water Concentrations (µg/L)		NAPL Present?	No	
Benzene	7	Isopropylbenzene	0	
Toluene	44	Naphthalenes	463	
Ethylbenzene	91	мтве	0	
Xylenes	544	TPH-GRO	1,811	
Trimethylbenzenes	0	TPH-DRO	0	
Butylbenzene	0	Sum of Dissolved Concentrations:	2,274	

De Vargas

REPORTED Ground Water Concentrations (µg/L)		NAPL Present?		
Benzene	44	Isopropylbenzene	0	
Toluene	57	Naphthalenes	1,660	
Ethylbenzene	53	МТВЕ	0	
Xylenes	346	TPH-GRO	9,160	
Trimethylbenzenes	0	TPH-DRO	0	
Butylbenzene	0	Sum of Dissolved Concentrations:	10,820	

APPENDIX A – AMENDMENTS DOSAGE

Capital 66 – CM-1

	NAPL Present?		
266	Isopropylbenzene	0	
20	Naphthalenes	8	
10	мтве	0	
21	TPH-GRO	650	
0	TPH-DRO	0	
0	Sum of Dissolved Concentrations:	658	
	20 10 21 0	266 Isopropylbenzene 20 Naphthalenes 10 MTBE 21 TPH-GRO 0 TPH-DRO	

Capital 66 – CMW-3R

REPORTED Ground Water Concentrations (µg/L)		NAPL Present?		
Benzene	61	Isopropylbenzene	0	
Toluene	132	Naphthalenes	450	
Ethylbenzene	61	МТВЕ	0	
Xylenes	1,096	TPH-GRO	3,600	
Trimethylbenzenes	0	TPH-DRO	0	
Butylbenzene	0	Sum of Dissolved Concentrations:	4,050	

Capital 66 – CMW-4

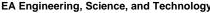
REPORTED Ground Water Concentrations (µg/L)		NAPL Present?		
Benzene	1,330	Isopropylbenzene	0	
Toluene	8,967	Naphthalenes	331	
Ethylbenzene	880	мтве	0	
Xylenes	6,200	TPH-GRO	21,381	
Trimethylbenzenes	0	TPH-DRO	0	
Butylbenzene	0	Sum of Dissolved Concentrations:	21,712	
Butylbenzene	0	Sum of Dissolved Concentrations:	2	

Design Center

	NAPL Present?		
874	Isopropylbenzene	0	
4,200	Naphthalenes	514	
897	МТВЕ	0	
6,590	TPH-GRO	21,291	
0	TPH-DRO	0	
0	Sum of Dissolved Concentrations:	21,805	
	4,200 897 6,590	874 Isopropylbenzene 4,200 Naphthalenes 897 MTBE 6,590 TPH-GRO 0 TPH-DRO	

APPENDIX B FIELD FORMS

Site Name:	Santa Fe County Ju	udicial Complex		JOB NUMBER: AREA: CLIENT: NMED PSTB			of	
Ва	tch Mix	Volume PetroFlx (gal)	Volume Water (gal)	Volume Nutirents (Nitrate/Sulfat (gal)	Volume Nutirents (Nitrate) (gal)	Number of batches	Total Volume (gal)	te variance in inj. rate or pressures; I cause; break-through pressure.
		(3)	(3)	(9)			(3)	
	ı	T	ı	I	Injectio			
Injection Point	Injection Interval	Time	Flow Meter Reading - Start	Flow Meter Reading - End	Volume (gal)	Wellhead Flow Rate (gpm)	Pressure (psi)	





EA Engineering, Science, and Technology 320 Gold Avenue SW, Suite 1210 Albuquerque, NM 87102 Phone: (505) 224-9013

MONITOR WELL SAMPLING FIELD FORM

FLUID LEVEL DATA									
Well ID		-	Date gauged						
Site		-	Time gauged						
Depth to PSH	Feet	Well diameter	Inches		r Bailing NAP				
		Height of fluid		Depth to PSH		Feet			
Depth to water	Feet	column	Feet	Depth to water		Feet			
Total depth	Feet	Volume in well	Gallons	NAPL thickness		Feet			
NAPL thickness	Feet			NAPL Recovered		Gallons			
		(3 well volume	s = gallons)						
		GROUNDWA	TER SAMPLING DATA						
Time/date purged		_ F	Purge Method						
Time	Purge Volume (gal)	Temp (°C)	SpC (µs/cm)	pН	ORP (mV)	DO (mg/L)			
Actual purge volume _	gal.		Field measurements stabilized	within ± 10%?					
Time/date sampled		-	Purged/sampled by						
Sample method									
Requested analyses									
Comments/observation	ns								

APPENDIX C HEALTH AND SAFETY PLAN



Site Name: Santa Fe County Judicial Complex	Site Contact: NMED PSTB			Telephone: 505-222-9562		
Location: Santa Fe, NM	Client Contact	Client Contact: Susan Van Gonten			Telephone: 505- 372-8153	
EPA I.D. No.: N/A	Prepared By:	Tyler Curley		Date: Sep	tember 9, 2020	
Project No.	Date of Propos	ed Activities: 2020-2021		ı		
Objectives:		Site Type: Check as man	y as applicable.			
All personnel working on this site are trained in a 29 CFR 1910.120 and are currently active in a me		Active	☐ Industrial \	Waste	Well field	
monitoring program to perform work on a hazardous waste site. The objective of this health and safety plan (HSP) is to list the		☐ Inactive	Landfill		Underground storage tank	
<u> -</u>	site-specific hazards and the hazards controls to be used to ensure		Confined s		☐ II.1	
worker safety for the following activities:Soil Boring installation and petrofix injection.		☐ Unsecure	(must use long	g torm)	Unknown (must use long form)	
S I J		_	Uncontrol		_	
			(must use long	g form)	Other (Active Business)	
Site Description/History and Site Activities:						
The properties which comprise the Santa Fe Coun several surrounding office and retail buildings. At Installation of soil borings using a 3.5" sol	ctivities at the site	e include:			•	

Note: A site map, definitions, and additional information about this form are provided on the last three pages of this form.



Waste Management Practices:					
Soil cuttings will be containerized in a 55-gallog	n steel drums and s	stored on site pending lab results.			
NV 4 75					
Waste Types: Liquid	⊠ Solid	☐ Sludge ☐ Gas			
Waste / Chemical Corrosive Characteristics:	Oxidizer	∑ Flammable			
		Radioactive			
Reactive Inert		Other (specify)			
Chemical / Health Hazards of Concern:					
Explosion or fire hazard – monitor with combustible gas meter	☐ Inorganic ch	nemicals (nitrate and chloride)			
Oxygen deficiency – monitor with oxygen meter	Organic che	micals (PCP)			
 Landfill gases – monitor with methane and hydrogen sulfide meter 	⊠Petroleum Hy	vdrocarbons (as TPH GRO)			
☐ Surface tanks	Undergroun	d storage tanks			
☐ Potential inhalation or skin absorption hazard	Other (speci	fy)			
that is immediately dangerous to life and health (IDLH) – must use long form					
Explosion or Fire Potential: High	Medium				
Radiological Hazards of Concern:					



☐ Ionizing radiation (Radioactive materials, X-ray) ☐ Non-ionizing radiation (ultraviolet, lasers) (must use long form)				
Safety Hazards of Concern: (Based on anticipated clean-up				
operations)				
Heavy Equipment	□ Buried utilities			
□ Pinch points	Overhead utilities			
Energized and rotating equipment (drill rig)	☐ Suspended loads			
☐ Steam cleaning equipment	☐ Buried drums			
☐ Excavations	Work over or near water			
☐ Welding or torch cutting (Hot work)	☐ Work from elevated platforms			
☐ Sharp Objects	Manual Lifting			
Hazardous energy sources (electrical, hydraulic)	Heavy traffic			
○ Vehicle Traffic (use cones or barriers)				
Physical Hazards of Concern:	☐ Vibration			
Heat stress	Noise Noise Noise Noise Noise			
	Solar (sunburn)			
Slips, trips, falls	Unstable or steep terrain			
	Other (specify)			
Biological Hazards of Concern:	☐ Snakes (rattlesnakes)			
Poisonous plants (poison ivy, poison oak)	Stinging insects (bees, wasps)			
Spiders (black widow or brown recluse spiders)	Animals (feral dogs, mountain lions, etc.)			
☐ Medical waste	☐ Blood or other body fluids			
Unexploded Ordnance:	Unexploded Ordnance (UXO) (must use long form)			
Chemical Warfare Materials (CWM) (must use long form)	Explosive ordnance waste (OEW) (must use long form)			
Chemical Warfare Materials (CWM) (must use long form)				



Chemical Products EA Engineering Will Use or Store On Site: (Attach a Material Safety Data Sheet [MSDS] for each item.)
☐ Hydrochloric acid (HCl)
☐ Nitric Acid (HNO ₃)
Sodium hydroxide (NaOH)
☐ Sulfuric Acid (H ₂ SO ₄)
Other (specify) PetroFix TM
Other (specify)



Chemicals Present at Site	Highest Observed Concentration (µg/L,	PEL/TLV (specify ppm or	IDLH Level (specify ppm or mg/m³)	Symptoms and Effects of Acute	Photo- ionization Potential (eV)
Chemicais i resent at Site	groundwater)	mg/m ³)	ppin or ing/in)	Exposure	(61)
Benzene	1,800	1 ppm (PEL)	500 ppm CARC	Severe irritant (skin, eye); reproductive toxin; CNS narcotic	9.24
Toluene	13,000	100 ppm	500 ppm	Severe irritant (skin, eye); reproductive toxin; CNS narcotic; fatigue, weakness, dizziness; headache	8.82
Ethylbenzene	2,300	100 ppm	800 ppm	Severe irritant (skin, eye, mucous membranes); headache; narcosis	8.76
Xylenes (o, m, and p)	17,000	100 ppm	900 ppm	Irritant (skin, eye, throat); reproductive toxin, CNS narcotic	8.44 – 8.56
Diesel Fuel	Unknown	NA	NA	Irritant (respiratory tract); possible carcinogen; possible mutagen	NA
Gasoline	Unknown	300 ppm	CARC	Irritant (skin, eye, mucous membrane); CNS narcotic	NA

Notes: NIOSH Pocket Guide to Chemical Hazards, September 2005

 $mg/m^3 = Milligram per cubic meter$



Field Activities Covered Under This Plan:								
			Level of Protection					
Task Description		Type	Primary		Contingency		Date of Activities	
1. PetroFix Injection			□ C	\square D	☐ C	\square D	2020	
		☐ Nonintrusive						
2.		☐ Intrusive	□ C	\square D	□ C	\Box D		
		☐ Nonintrusive						
Site Personnel and Responsibilities (include subcontractors):								
Employee Name and Office Code	Task		Responsibilities					
Mike McVey	1	Project Manager or Designated Leader: Directs project activities, makes site safety coordinator (SSC) aware of pertinent project developments and plans, and maintains communications with client as necessary.						
Vener Mustafin	1	Project Engineer: Approves all critical field changes related to the design.						
Tyler Curley, Elliot Andelman, Galveston Begaye	1	Field Engineer/SSHO: Conduct site safety oversight and completes tasks as directed by the program manager, project engineer, and SSC and follow all procedures and guidelines established in the EA Engineering Health and Safety Manual.						



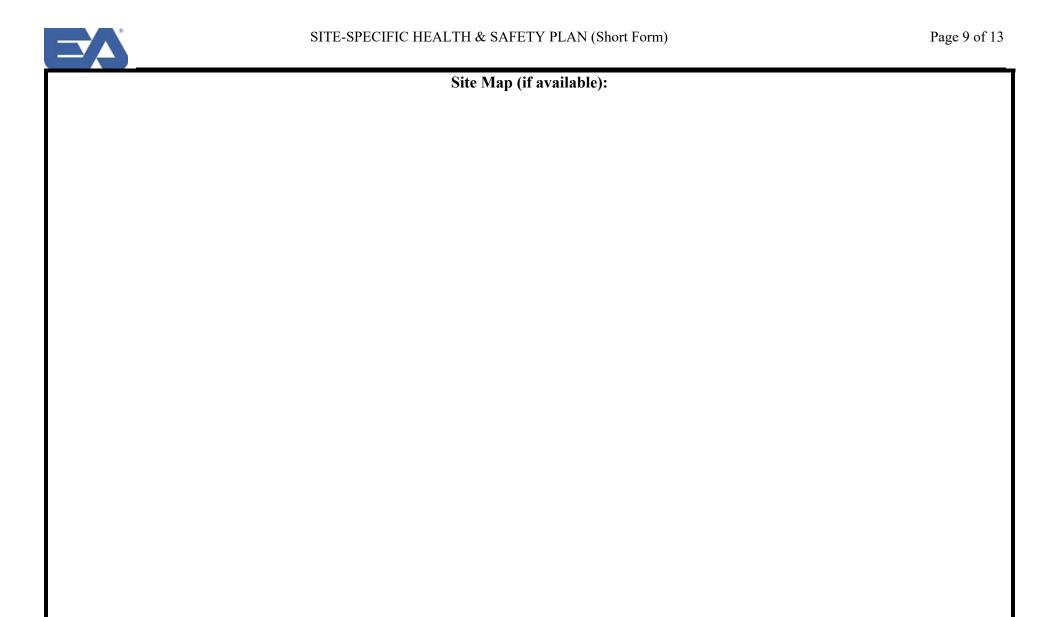
Protective Equipment: (Indicate type or material as necessary for each task; attach additional sheets as necessary)								
Task: 🔲 1	2	Task: 1	2					
Level: \square C	D	Level: C	D					
☑ Primary	Contingency	□ Primary	Contingency					
RESPIRATORY	PROTECTIVE CLOTHING	RESPIRATORY	PROTECTIVE CLOTHING					
Not needed	Not needed ■ Not needed Not needed	Not needed	Not needed ■ Not needed Not needed Not needed Not needed					
☐ APR:	Tyvek® coveralls:	☐ APR:	Tyvek® coveralls:					
Cartridge:	Saranex® coveralls:	Cartridge:	Saranex® coveralls:					
Escape mask:	Coveralls:	Escape mask:	Coveralls:					
Other:		Other:	Other:					
HEAD AND EYE	GLOVES	HEAD AND EYE	GLOVES					
Not needed	Not needed	Not needed	Not needed					
Safety glasses:	Undergloves:	Safety glasses:	Undergloves:					
Face shield:		Face shield:	Gloves: Nitrile					
	Overgloves:	Goggles:						
Hard hat:		Hard hat:						
Other:		Other:						
FIRST AID EQUIPMENT	BOOTS	FIRST AID EQUIPMENT	BOOTS					
Not needed	Not needed	Not needed	Not needed					
Standard First Aid kit	Work boots: Steel Toed	Standard First Aid kit	Work boots:					
Portable eyewash	Overboots:	Portable eyewash	Overboots:					
OTHER		OTHER						
		l						
specify):		(specify):						

Note: APR = Air purifying respirator



Monitoring Equipme	nt: (Sp	pecify instruments needed for	each task; attach additional sheets as necessary)	
Instrument	Task	Instrument Reading	Action Guideline	Comments
Combustible gas indicator model:	<u> </u>	0 to 10% LEL	No explosion hazard	Not needed Not needed
	□ 2	10 to 25% LEL	Potential explosion hazard; notify SSC	
		> 25% LEL	Explosion hazard; interrupt task; evacuate site, notify SSC	
O2 meter model:	1	> 23.5% O2	Potential fire hazard; evacuate site	
	□ 2	23.5 to 19.5% O2	Oxygen level normal	
		< 19.5% O2	Oxygen deficiency; interrupt task; evacuate site; notify SSC	
Photoionization detector model:	1	>0 to 5 ppm above background	Level D	☐ Not needed
☐ 11.7 eV ☑ 10.6 eV	_ 2	>5 to 50 ppm above background	Level C	
☐ 9.8 eV ☐ <u></u> eV		>50 ppm above background	Evacuate site; notify SSC	
Flame ionization detector model:	_ 1	>0 to 5 ppm above background	Level D	Not needed
	□ 2	>5 to 50 ppm above background	Level C	
		>50 ppm above background	Evacuate site; notify SSC	
Detector tubes models:	1 2	Specify:	Specify:	Note: This action level for Not needed upgrading the level of protection is one-half of the contaminant's PEL. If the PEL is reached, evacuate the site and notify the SSC.
Respirable dust monitor model:	$\begin{array}{ c c c c }\hline & 1 \\\hline & 2 \end{array}$	Specify:	Specify:	Not needed Not needed
Other: (specify):	☐ 1 ☐ 2	Specify:	Specify:	⊠ Not needed
Notes: $eV = Electron volt$	PF	L = Permissible exposure limit L	EL = Lower explosive limit npm = Part per million	$O_2 = Oxygen$

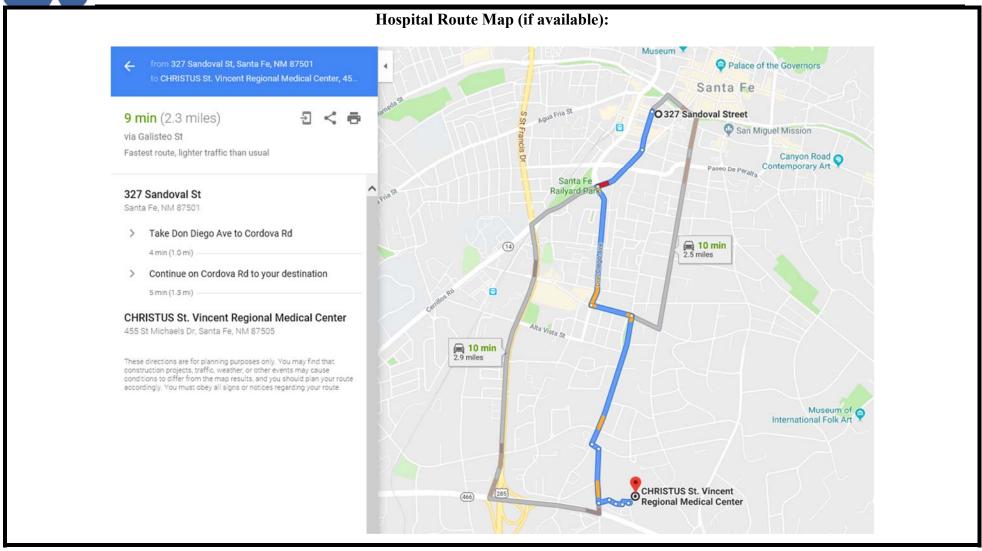
Disclaimer: This Health and Safety Manual is the property of EA. Any reuse of the Manual without EA Engineering permission is at the sole risk of the user. The user will hold harmless EA for any damages that result from unauthorized reuse of this manual. Authorized users are responsible for obtaining proper training and qualification from their employer before performing operations described in this manual.





Additional Comments:	Emergency Contacts:		Telephone
EA Engineering site workers will contain and absorb any chemicals used or	U.S. Coast Guard Nationa	al Response Center	800/424-8802
transferred on site.	InfoTrac		800/535-5053
	Fire department		911
	Police department	1	911
	EA Engineering Personne	el: source Manager: Michele	410/584-7000
	Bailey	source Manager. Michele	410/384-7000
		Safety Manager: Pete Garger	410/790-6338
		ty Coordinator: Teri McMillan	505/259-6779
	Program Manager: M		505/235-9037
	Site Safety Coordinat	or: EA Personnel	
Personnel Decontamination and Disposal Method:	Medical Emergency:		
Personnel will follow the U.S. Environmental Protection Agency's "Standard	Hospital Name:	CHRISTUS St. Vincent Regiona	al Medical
Operating Safety Guides" for decontamination procedures for Level D personal		Center	
protection. The following decontamination stations should be set up in each			
decontamination zone:	Hospital Address:	455 St Michaels Dr,	
All equipment will be decontaminated in a designated area		Santa Fe, NM 87505	
A11 11	Hospital Telephone:	Emergency – 911	
All disposable equipment and gloves will be double-bagged or containerized in an acceptable manner and disposed of in accordance with local regulations.		General – (505) 913-3361	
	Ambulance	911	
	Telephone:		





Note: This page must be posted on site.



AP	PROVAL AND SIGN-OFF FORM	
	Project No.	
I have read, understood, and agree with the information Coordinator as well as procedures and guidelines establ medical requirements for conducting field work and have	ished in the EA Engineering Health and Safety M	
Name	Signature	Date
APPROVALS: (Two Signatures Required)		
Site Safet	ty Coordinator	Date
Health and S	afety Coordinator	Date



Intrusive - Work involving excavation to any depth, drilling, opening of monitoring wells, most sampling, and Geoprobe® work

Nonintrusive - Generally refers to site walk-throughs or field reconnaissance

Levels of Protection

Level D - Hard hat, safety boots, and glasses, may include protective clothing such as gloves, boot covers, and Tyvek® or Saranex® coveralls

Level C - Hard hat, safety boots, glasses, and air purifying respirators with appropriate cartridges, PLUS protective clothing such as gloves, boot covers, and Tyvek® or Saranex® coveralls

Emergency Contacts

InfoTrac - For issues related to incidents involving the transportation of hazardous chemicals; this hotline provides accident assistance 24 hours per day, 7 days per week

U.S. Coast Guard National Response Center - For issues related to spill containment, cleanup, and damage assessment; this hotline will direct spill information to the appropriate state or region

Health and Safety Plan Short Form

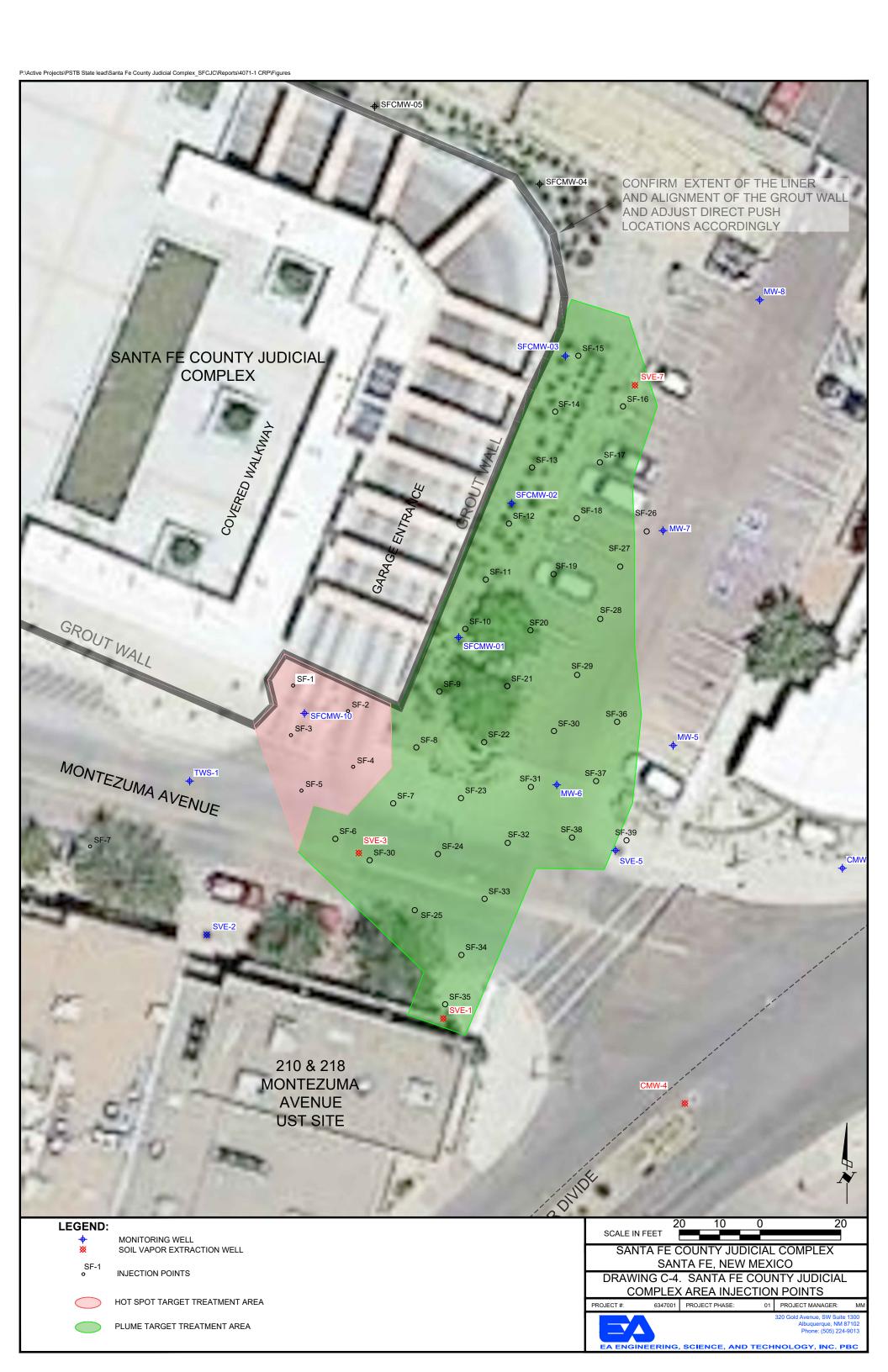
- Used for field projects of limited duration and with relatively limited activities; may be filled in with handwritten text
- Limitations:
 - No Level B or A work
 - Limited number of tasks
 - No confined space entry
 - No unexploded ordnance work or radiation hazard

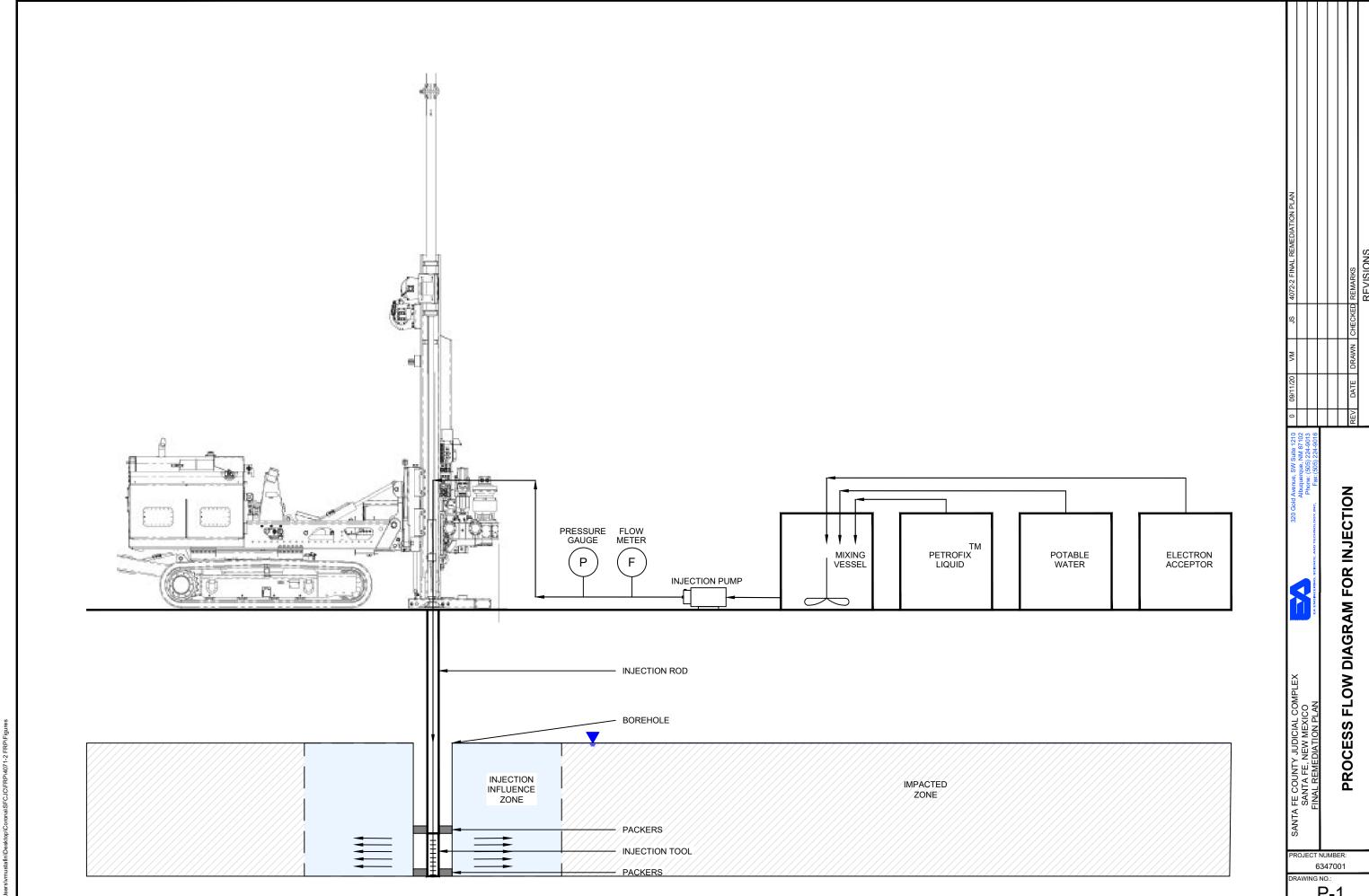
APPENDIX D DESIGN DRAWINGS



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC. PBC







P-1

APPENDIX E MANUFACTURER DATA SHEETS



PetroFix[™] Specification Sheet

PetroFix Technical Description

PetroFix is a remedial technology designed to treat petroleum fuel spills in soil and groundwater. A simple-to-use fluid that can be applied under low pressure into the subsurface or simply poured into open excavations, PetroFix offers a cost-effective solution for environmental practitioners and responsible parties to address petroleum hydrocarbon contaminants quickly and effectively.

PetroFix has a dual function; quickly removing hydrocarbons from the dissolved phase, by adsorbing them onto the activated carbon particles, while added electron acceptors stimulate hydrocarbon biodegradation in situ. The product can be applied with ease using readily available equipment associated with direct push technology.



The remedial fluid is a highly concentrated water-based suspension consisting of micron-scale activated carbon and biostimulating electron acceptors. PetroFix has a viscosity higher than water and is black in appearance. Its environmentally-compatible formulation of micron-scale activated carbon (1-2 microns) is combined with both slow and quick-release inorganic electron acceptors. A blend of additional electron acceptors is included along with the PetroFix fluid. Practitioners can select between a sulfate and nitrate combination blend (recommended), or sulfate only for the additional electron acceptors required.

Chemical Composition

Activated Carbon - CAS 7440-44-0 > 30% Calcium sulfate dihydrate - CAS 10101-41-4 < 10%

Properties

Appearance: Black Fluid

Viscosity: 1500-3500 cP (syrup-like)

pH: 8-10

Storage and Handling Guidelines

Storage:

- Store away from incompatible materials
- Store in original closed container
- Store at temperatures below 95° F
- Dispose of waste and residues in accordance with local authority requirements

Handling:

- Never add additives to solution prior to mixing with water
- Wear appropriate personal protective equipment
- Do not taste or ingest
- Observe good industrial hygiene practices
- Wash hands after handling



Applications

PetroFix is mixed with water on-site and easily applied into the sub-surface using low pressure injections, or mixed in excavations. PetroFix is compatible with, and can be used with ORC Advanced® to expedite rates of biodegradation. For more information about co-application with ORC Advanced, contact REGENESIS.



Nitrate/Sulfate Addition and Syntrophic Biodegradation:

Kickstarting Petroleum Biodegradation





Nitrate/Sulfate Addition and Syntrophic Biodegradation: Kickstarting Petroleum Biodegradation

The remediation of petroleum- impacted sites in both active and monitored natural attenuation situations commonly relies on biodegradation. A large and diverse population of microbes is known to use petroleum hydrocarbons as a source, forming the bioremediation for these contaminants¹. Petroleum biodegradation is fastest when microbes have an ample supply of oxygen, which is the most favorable electron acceptor from a redox standpoint. For this reason, oxygen is guickly depleted in most petroleum-impacted sites (Figure 1). One of the next-best electron

acceptors is nitrate (NO_3 -) which is also rapidly utilized in groundwater when petroleum or other carbon sources are present. After oxygen and nitrate, several other electron acceptors, including iron and sulfate (SO_4^{2-}) may be used by microbes. As the more favorable electron acceptors are consumed, an aquifer will become methanogenic. Under these conditions the acetate, other small organic compounds, CO_2 , and H_2 that are produced by syntrophic degradation of the petroleum hydrocarbons are ultimately converted to CH_4 .

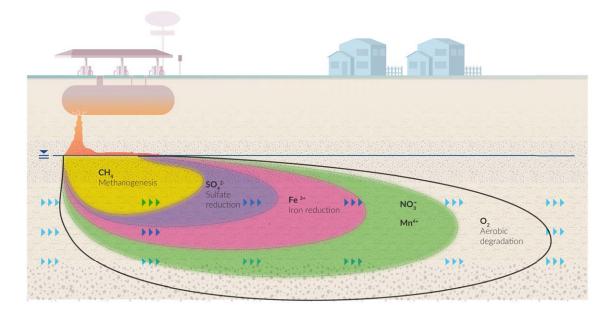


Figure 1. Redox zones created by the depletion of electron acceptors in a common hydrocarbon plume. The order that petroleum degrading microbes utilize electron acceptors follows with their redox potential. Oxygen has the most positive redox potential and is therefore depleted first. Image adapted from https://toxics.usgs.gov/photo_gallery/photos/bimidji/bimidji4_lg.jpg





The mineralization of petroleum contaminants using electron acceptors like oxygen requires a stoichiometric amount of the electron acceptor, which often is an impractical amount or necessitates follow-up injections. This limitation is true for PetroFix[™] or almost any other remedial amendment on the market. However, the addition of non-stoichiometric amounts of nitrate or sulfate as electron acceptors can aid biodegradation, even after their consumption, by promoting syntrophy.

Furthermore, reports have demonstrated improved outcomes when both electron acceptors are used together as a result of the following benefits of co-application²:

- 1. Denitrifying bacteria remove benzene more rapidly compared to sulfate reducers alone. Because benzene is usually the petroleum contaminant with the lowest cleanup standard, this can be a significant advantage³
- 2. Sulfate reducers and denitrifying bacteria metabolize BTEX components in slightly different ways. Providing nitrate and sulfate stimulates both populations and promotes faster, more complete petroleum degradation.
- 3. Many of the syntrophic bacteria capable of reducing nitrate and sulfate will continue to thrive after the added electron acceptors are exhausted. Petroleum components will be fermented to acetate and hydrogen which are then removed by methanogens (see figure 2).

Syntrophic Metabolism

Syntrophy describes the process in which a community of microbes 'feed together', simultaneously using carbon sources and their byproducts in an ecological partnership⁴.

A simplified illustration of syntrophy is shown in Figure 2. On petroleum-contaminated sites, BTEX and other hydrocarbons will be metabolized to acetate and hydrogen by syntrophs. This process can continue to occur so long as the produced hydrogen and acetate are removed by a community of methanogens. Under these conditions, contaminant degradation can proceed without the need for an

additional electron acceptor. Researchers have shown that syntrophic arrangements are common and critical to the success of natural attenuation on many petroleum-impacted sites⁵.







Syntrophic Metabolism - Continued

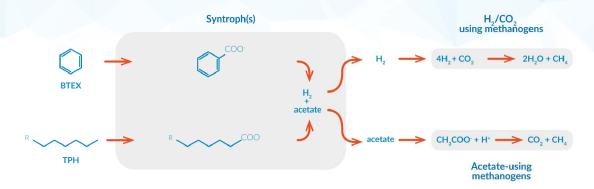


Figure 2 Syntrophic metabolism on petroleum-impacted sites proceeds in two general steps. The first group of microbes metabolize BTEX and other hydrocarbons into simpler substrates like acetate and hydrogen (H_2). These metabolites are mineralized by subsequent microbes, which may be methanogens (shown) or reducers of other electron acceptors, when available. By working together, these microbes maintain an ecological balance that facilitates efficient petroleum degradation. Figure adapted from Ref 3.

Conclusion

The remediation strategy employed when applying PetroFix is two-part: contaminants are adsorbed to the activated carbon and biodegradation is kickstarted through the addition of a sulfate/nitrate blend to stimulate the growth of syntrophic and BTEX-degrading microbes. After the added nitrate and sulfate are exhausted, petroleum degradation will continue via syntrophic processes, meaning the continuous addition of electron acceptors is not required. The combination of an injectable form of activated carbon that can adsorb contaminants and contain them in a finite zone with electron acceptors that will initially degrade the contaminants anaerobic pathways and promote syntrophic conditions that sustain degradation will expedite the remediation of petroleumimpacted sites.

References:

- 1. Weelink, S. A. B., van Eekert, M. H. A. & Stams, A. J. M. Degradation of BTEX by anaerobic bacteria: physiology and application. *Rev. Environ. Sci. Biotechnol.* **9**, 359–385 (2010).
- 2. Cunningham, J. A., Rahme, H., Hopkins, G. D., Lebron, C. & Reinhard, M. Enhanced In Situ Bioremediation of BTEX-Contaminated Groundwater by Combined Injection of Nitrate and Sulfate. *Environ. Sci. Technol.* **35**, 1663–1670 (2001).
- 3. Vogt, C., Kleinsteuber, S. & Richnow, H.-H. Anaerobic benzene degradation by bacteria. *Microb. Biotechnol.* **4**, 710–724 (2011).
- 4. Gieg, L. M., Fowler, S. J. & Berdugo-Clavijo, C. Syntrophic biodegradation of hydrocarbon contaminants. *Curr. Opin. Biotechnol.* **27**, 21–29 (2014).
- 5. Garg, S. et al. Overview of Natural Source Zone Depletion: Processes, Controlling Factors, and Composition Change. *Groundw. Monit. Remediat.* **37**, 62–81 (2017).







SAFETY DATA SHEET



1. Identification

Product identifier PetroFix Electron Acceptor Blend

Other means of identification

Recommended use Remediation of soils and groundwater.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Regenesis

Address 1011 Calle Sombra

San Clemente, CA 92673 USA

General information 949-366-8000

E-mail CustomerService@regenesis.com

Emergency phone number For Hazardous Materials Incidents ONLY (spill, leak, fire, exposure or accident), call

CHEMTREC 24/7 at:

1-800-424-9300 USA, Canada, Mexico 1-703-527-3887 International

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Serious eye damage/eye irritation Category 2B

OSHA defined hazards Not classified.

Label elements

Hazard symbol None. Signal word Warning

Hazard statement Causes eye irritation.

Precautionary statement

Prevention Wash thoroughly after handling.

Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and

easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Store away from incompatible materials. **Storage**

Dispose of waste and residues in accordance with local authority requirements. **Disposal**

Hazard(s) not otherwise

classified (HNOC)

None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Ammonium sulfate	7783-20-2	40 - 60
Sodium nitrate	7631-99-4	40 - 60

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

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Eye contactDo not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove

contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation

develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important

symptoms/effects, acute and

delayed

Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Dusts may irritate the respiratory tract, skin and eyes.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media

Unsuitable extinguishing media

Use extinguishing agent suitable for type of surrounding fire.

None known

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed. Combustion products may include: nitrogen oxides, sulfur oxides, ammonia.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Use water spray to cool unopened containers.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards Material will not burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Absorb in vermiculite, dry sand or earth and place into containers. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid contact with eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

No exposure limits noted for ingredient(s).

Biological limit valuesNo biological exposure limits noted for the ingredient(s).

PetroFix Electron Acceptor Blend

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection Unvented, tight fitting goggles should be worn in dusty areas.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove

supplier.

Skin protection

Other Wear suitable protective clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Wear NIOSH approved

respirator appropriate for airborne exposure at the point of use. Appropriate respirator selection should be made by a qualified professional. Recommended use: Wear respirator with dust filter.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical stateSolid.FormPowder.ColorWhite.

Odor Not available.
Odor threshold Not available.
pH Not available.
Melting point/freezing point Not available.
Initial boiling point and boiling Not available.

range

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) This material will not burn.

Upper/lower flammability or explosive limits

Flammability limit - lower

Not available.

(%)

Flammability limit - upper

Not available.

(%)

Vapor pressureNot available.Vapor densityNot available.Relative densityNot available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient Not available.

(n-octanol/water)

Auto-ignition temperatureNot available.Decomposition temperatureNot available.ViscosityNot available.

Other information

Explosive properties Not explosive. **Oxidizing properties** Not oxidizing.

PetroFix Electron Acceptor Blend

SDS US

10. Stability and reactivity

ReactivityThe product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous

reactions

No dangerous reaction known under conditions of normal use.

Conditions to avoid Contact with incompatible materials. Heat.

Incompatible materials Strong reducing agents. Strong acids.

Hazardous decomposition

products

No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

InhalationDust may irritate respiratory system.Skin contactDust or powder may irritate the skin.

Eye contact Causes eye irritation.

Ingestion May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Dusts

may irritate the respiratory tract, skin and eyes.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye

irritation

Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicityNo data available to indicate product or any components present at greater than 0.1% are

mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity -

single exposure

Not classified.

Specific target organ toxicity -

repeated exposure

Not classified.

Aspiration hazard Not an aspiration hazard.

Further information Nitrate poisoning resulting in methemoglobinemia manifested as cyanosis is rare, but possible for

people with specific susceptibility traits.

12. Ecological information

EcotoxicityThe product is not classified as environmentally hazardous. However, this does not exclude the

possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability The product solely consists of inorganic compounds which are not biodegradable.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects None known.

PetroFix Electron Acceptor Blend

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of

contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste

disposal company.

Waste from residues / unused

products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see:

Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is

emptied. Empty containers should be taken to an approved waste handling site for recycling or

disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

the IBC Code

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication

Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

chemical

Classified hazard

Yes

categories

Serious eye damage or eye irritation

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.	
Ammonium sulfate	7783-20-2	40 - 60	
Sodium nitrate	7631-99-4	40 - 60	

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated.

(SDWA)

US state regulations

US. Massachusetts RTK - Substance List

Ammonium sulfate (CAS 7783-20-2) Sodium nitrate (CAS 7631-99-4)

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US. New Jersey Worker and Community Right-to-Know Act

Sodium nitrate (CAS 7631-99-4)

US. Pennsylvania Worker and Community Right-to-Know Law

Ammonium sulfate (CAS 7783-20-2) Sodium nitrate (CAS 7631-99-4)

US. Rhode Island RTK

Ammonium sulfate (CAS 7783-20-2) Sodium nitrate (CAS 7631-99-4)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

^{*}A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 15-August-2018

Revision date Version # 01
HMIS® ratings Health: 1

Flammability: 0 Physical hazard: 0

NFPA ratings



Disclaimer

Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

PetroFix Electron Acceptor Blend SDS US

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

APPENDIX F UNDEGROUND INJECTION CONTROL GENERAL DISCHARGE PERMIT



NEW MEXICO ENVIRONMENT DEPARTMENT GROUND WATER QUALITY BUREAU

UNDERGROUND INJECTION CONTROL



GENERAL DISCHARGE PERMIT

Certified Mail- Return Receipt Requested

Facility Name:	Santa Fe County Judicial Complex State Lead Site
Facility Location:	327 Sandoval Street, Santa Fe, New Mexico
	Lat: 35.684119°
	Long: -105.942590°
	Santa Fe County
Legally Responsible Party:	NMED Petroleum Storage Tank Bureau
	2905 Rodeo Park Drive East, Building 1
	Santa Fe, New Mexico, 87505
	Tel (505)-476-4397
	Point of Contact: Mike McVey, P.G. EA Engineering, 320 Gold Avenue Suite 1300 Albuquerque, NM 87102 Tel (505)-224-9013 x 1530 mmcvey@eaest.com
Remediation Oversight Agency Contact:	NMED PSTB
	Attn: Susan von Gonten
	(505) 372-8153
Remediation or Injection Plan Identification:	Santa Fe County Judicial Complex Final Remediation Plan
Permitting Action:	New DP-

Jason Herman

(505) 825-2713

PPS Contact

EFFECTIVE DATE:	TERM ENDS:
-----------------	------------

Michelle Hunter Chief, Ground Water Quality Bureau

[Subsection H of 20.6.2.3109 NMAC, NMSA 1978, § 74-6-5.1]

SANTA FE COUNTY JUDICIAL COMPLEX], DP-

EFFECTIVE DATE: _____

I. UIC GENERAL DISCHARGE PERMIT

The New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) issues this Underground Injection Control General Discharge Permit (UIC Permit) for the subsurface emplacement of additive fluids through a Class V UIC injection well for the purpose of facilitating vadose zone or groundwater remediation. The GWQB issues this UIC Permit to the New Mexico Environment Department (NMED) Petroleum Storage Tank Bureau (PSTB) (Permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Ground and Surface Water Protection Regulations, 20.6.2 NMAC.

In issuing this UIC Permit, the GWQB has determined that the requirements of Subsection C of 20.6.2.3109 NMAC have been met. The activities authorized by this UIC Permit are principally governed by the Santa Fe County Judicial Complex Final Remediation Plan (Injection Plan), under the authority of NMAC 20.5.119, Corrective Action for Storage Tank Systems Containing Petroleum Products, with oversight by the the New Mexico Environment Department Petroleum Storage Tank Bureau Remedial Action Program. Compliance with this UIC Permit requires compliance with the terms, requirements, and conditions of the Injection Plan. The term of this UIC Permit shall be no longer than five years from the effective date of this UIC Permit.

The injection activities, the location of the injection site, the type of injection and quantities of additives being used are briefly described as follows:

Injection Activities (summary: including injection well type, number of wells, and injection frequency)

Copy of the Injection Plan Attached (required):	
	and the second of the second

Summary of Injection Plan: Soil and groundwater impacted by the past releases of gasoline from underground storage tanks in the area will be remediated by injecting Regenesis PetroFix, a microscale activated carbon amended with electron acceptors. Boreholes will be drilled and amendments injected using an injection tool isolated with packers.

Injection Site Information

Depth to most shallow groundwater (required): 20 ft

Existing concentration of total dissolved solids (TDS) in groundwater (required): Average 1,300 mg/L and high of 4,500 mg/L based on average specific conductance of 2,000 uS/cm and high of 7,000 uS/cm. mg/L

Location (required): Area bound by De Vargas Street to the North, Sandoval Street to the West, Galisteo Street and Cerillos Road to the east, and Montezuma Avenue to the South. Please see attached map.

County (required): Santa Fe County

Latitude: 35.684119° Longitude: -105.942590°

Map Showing Area of Injection Sites Attached (required):

Additives Being Used (including volumes, manufacturer, and mixing ratios)

Regensis PetroFix - a micron-scale activated carbon with alternative electron acceptors will be injected to remediate soil and groundwater impacted by the release of gasoline.

Injection quantities:

Approximately 80,000 lbs of Regensis PetroFix.

Approximately 4,000 lbs of electron acceptors.

Approximately 220,000 gallons of potable water.

Approximately 80-100 injection points.

Anticipated Precipitation, Dissolution, Adsorption, and Desorption Products

Activated carbon will coat the soil aquifer matrix and absorb contamination that will degrade by microbial population through time. In-situ biodegradation will be enhanced by the electron acceptors that will be used up by the microbial population to degrade gasoline constituents.

Public Notice Posting Locations

2 inch by 3 inch Newspaper Ad required for Renewal applications.

Newspaper: NA

3 inch by 4 inch Newspaper Ad required for New, Modification, and Renewal/Modification applications.

Newspaper: The Santa Fe New Mexican

2 feet by 3 feet sign posted for 30 days in a location conspicuous to the public at or near the facility required for New, Modification, and Renewal/Modification applications.

Sign Location: Santa Fe County Court House

8.5 inch by 11 inch or larger posted off-site location conspicuous to the public (e.g. public library). Required for New, Modification, and Renewal/Modification applications.

Flyer Location: Santa Fe Public Library, 145 Washington Avenue, Santa Fe, NM		

This UIC Permit consists of the complete and accurate completion of this UIC Permit form as determined by the GWQB.

Issuance of this UIC Permit does not relieve the Permittee of the responsibility to comply with the WQA, WQCC Regulations, and any other applicable federal, state and/or local laws and regulations, such as zoning requirements and nuisance ordinances.

Signatures

Signature must be that of the person listed as the legally responsible party on this application.

I, the applicant, attest under penalty of law to the truth of the information and supporting documentation contained in this application for an Underground Injection Control General Discharge Permit.

Applicant's Signature			
Signature:	Date:		
Printed Name:	Title:		

EFFECTIVE DATE: XX/XX/XXXX

II. FINDINGS

In issuing this UIC Permit, GWQB finds:

- 1. The Permittee is injecting fluids so that such injections will move directly or indirectly into groundwater within the meaning of Section 20.6.2.3104 NMAC.
- 2. The Permittee is injecting fluids so that such fluids will move into groundwater of the State of New Mexico which has an existing concentration of 10,000 mg/L or less of TDS within the meaning of Subsection A of 20.6.2.3101 NMAC.
- 3. The Permittee is using a Class V UIC well as described in 20.6.2.5002(B)(5)(d)(ii) NMAC for in situ groundwater remediation by injecting a fluid that facilitates vadose zone or groundwater remediation.
- 4. The Permittee is injecting fluids into groundwater in order to achieve the remediation goals identified in the Injection Plan.

III. AUTHORIZATION TO DISCHARGE

The Permittee is authorized to inject chemical additives into groundwater in accordance with this UIC Permit and the Injection Plan under the oversight of the New Mexico Environment Department Petroleum Storage Tank Bureau Remedial Action Program.

[20.6.2.3104 NMAC, Subsection C of 20.6.2.3106 NMAC, Subsection C of 20.6.2.3109 NMAC]

IV. CONDITIONS

The conditions of this UIC Permit shall be complied with by the Permittee and are enforceable by GWQB.

1. The Permittee shall perform remediation activities in accordance with the Injection Plan and shall notify GWQB of any changes prior to making them.

[20.6.2.3107 NMAC]

2. The Permittee shall monitor the injection activities and their effects on groundwater quality as required by the Injection Plan and shall provide GWQB with electronic copies of the required reporting and any pertinent documentation of activities at the site.

[20.6.2.3107.A NMAC, 20.6.2.3109.A NMAC]

EFFECTIVE DATE: XX/XX/XXXX

3. If the GWQB or the Permittee identifies any failure of the Injection Plan or this UIC Permit to comply with 20.6.2 NMAC not specifically noted herein, GWQB may require the Permittee to submit a corrective action plan and a schedule for completion of corrective actions to address the failure.

Additionally, the GWQB may require the Permittee to submit a proposed modification to the Injection Plan, this UIC Permit, or both.

[20.6.2.3107.A NMAC, 20.6.2.3109.E NMAC]

- 4. ADDITIONAL MONITORING REQUIREMENTS After injection, groundwater quality monitoring will be performed quarterly under the supervision and directive of the NMED PSTB.
- 5. TERMINATION Within 30 days of completion of activities authorized by this UIC Permit the Permittee shall submit a closure report and a request to terminate the UIC Permit to the GWQB for its approval. The closure report shall identify how the injection well(s) was (were) closed in accordance with the Injection Plan. The Permittee shall provide the New Mexico Environment Department Petroleum Storage Tank Bureau Remedial Action Program with a copy of this closure report.

[20.6.2.5005 NMAC, 19.27.4 NMAC]

6. INSPECTION and ENTRY – The Permittee shall allow a representative of the NMED to inspect the facility and its operations subject to this UIC Permit and the WQCC regulations. The GWQB representative may, upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which are located any records required to be maintained by regulations of the federal government or the WQCC.

The Permittee shall allow the GWQB representative to have access to, and reproduce for their use, any copy of the records, and to perform assessments, sampling or monitoring during an inspection for the purpose of evaluating compliance with this UIC Permit and the WQCC regulations.

Nothing in this UIC Permit shall be construed as limiting in any way the inspection and entry authority of GWQB under the WQA, the WQCC Regulations, or any other local, state, or federal regulations.

[20.6.2.3107.D NMAC, NMSA 1978, §§ 74-6-9.B and 74-6-9.E]

EFFECTIVE DATE: XX/XX/XXXX

7. MODIFICATIONS and/or AMENDMENTS – In the event the Permittee proposes a change to the injection plan that would result in a change in the volume injected; the location of the injections; or the concentration of the additives being injected by the facility, the Permittee shall notify GWQB prior to implementing such changes. The Permittee shall obtain approval (which may require modification of this UIC Permit) by GWQB prior to implementing such changes.

[20.6.2.3107.C NMAC, 20.6.2.3109.E and G NMAC]

8. COMPLIANCE with OTHER LAWS – Nothing in this UIC Permit shall be construed in any way as relieving the Permittee of the obligation to comply with all applicable federal, state, and local laws, regulations, permits, or orders.

[NMSA 1978, § 74-6-5.L]

9. PERMIT FEES – Payment of permit fees is due at the time of UIC Permit approval. Permit fees shall be paid in a single payment remitted to GWQB no later than 30 days after the UIC Permit effective date.

Permit fees are associated with issuance of this UIC Permit. Nothing in this UIC Permit shall be construed as relieving the Permittee of the obligation to pay all permit fees assessed by GWQB. A Permittee that ceases injecting or does not commence injecting during the term of the UIC Permit shall pay all permit fees assessed by GWQB. An approved UIC Permit shall be suspended or terminated if the facility fails to remit a payment by its due date.

[20.6.2.3114.F NMAC, NMSA 1978, § 74-6-5.K]

INJECTION PLAN SANTA FE COUNTY JUDICIAL COMPLEX SITE, SANTA FE, NEW MEXICO

EA Engineering, Science, and Technology, Inc. PBC (EA) has been selected to prepare a Final Remediation Plan (FRP) and to inject PetroFixTM amendment to address groundwater impacted by past release of gasoline contamination at the Santa Fe County Judicial Complex (SFCJC) State Lead Site in Santa Fe, New Mexico. Work is been performed under Contract number 19-667-3200-0007 and in accordance with the New Mexico Petroleum Storage Tank Regulations, New Mexico Administrative Code (NMAC) 20.5.119.1923, and work plan identification (WPID) number 4071, approved by the New Mexico Environment Department (NMED) Petroleum Storage Tank Bureau (PSTB) on June 27, 2019.

Regenesis PetroFixTM amendment will be injected to mitigate elevated groundwater concentrations. PetroFixTM is a water-based suspension of micron-scale (1-2μm) activated carbon and electron acceptors (slow and quick-release nutrients). As PetroFixTM distributes in the subsurface, it coats the soils with micron-scale activated carbon. Petroleum hydrocarbons rapidly sorb to the activated carbon, removing them from the groundwater. Electron acceptors in the PetroFixTM enhance natural biological degradation of the sorbed contamination. Biological degradation rejuvenates sorption sites to allow further influx sorption, providing a long-term treatment.

Amendments will be injected into open borehole using tool isolated with packers at the locations shown on the attached drawings. Injection intervals vary by injection area from 20-25 feet below ground surface (bgs) to 35-40 feet bgs in De Vargas, SFCJC, and Capital 66 Plumes and from 32 to 62 feet bgs at the Design Center Plume. After injection, borehole will be plugged with neat cement-bentonite or bentonite.

PetrofixTM will be augmented with alternative electron acceptors to enhance in-situ biodegradation of COCs.

- At De Vargas and Capital 66, a mix of potassium and ammonium sulfate will be utilized, as nitrate concentrations in these areas were elevated in some wells and relative concentrations of COCs are low.
- At SFCJC and Design Center, a mix of standard sodium nitrate and ammonium sulfate will be added. In these areas, nitrate was utilized during the Microcosm study and relative concentrations of COCs are high.
- Amendments will be mixed at a standard Regenesis ratio of 0.05 pounds of amendment mixture per 1 pound of PetrofixTM.

After the injection, groundwater monitoring will be conducted on a quarterly basis under direction and supervision of the NMED PSTB. NMED PSTB will receive and review quarterly reports to access progress of remediation and groundwater quality.

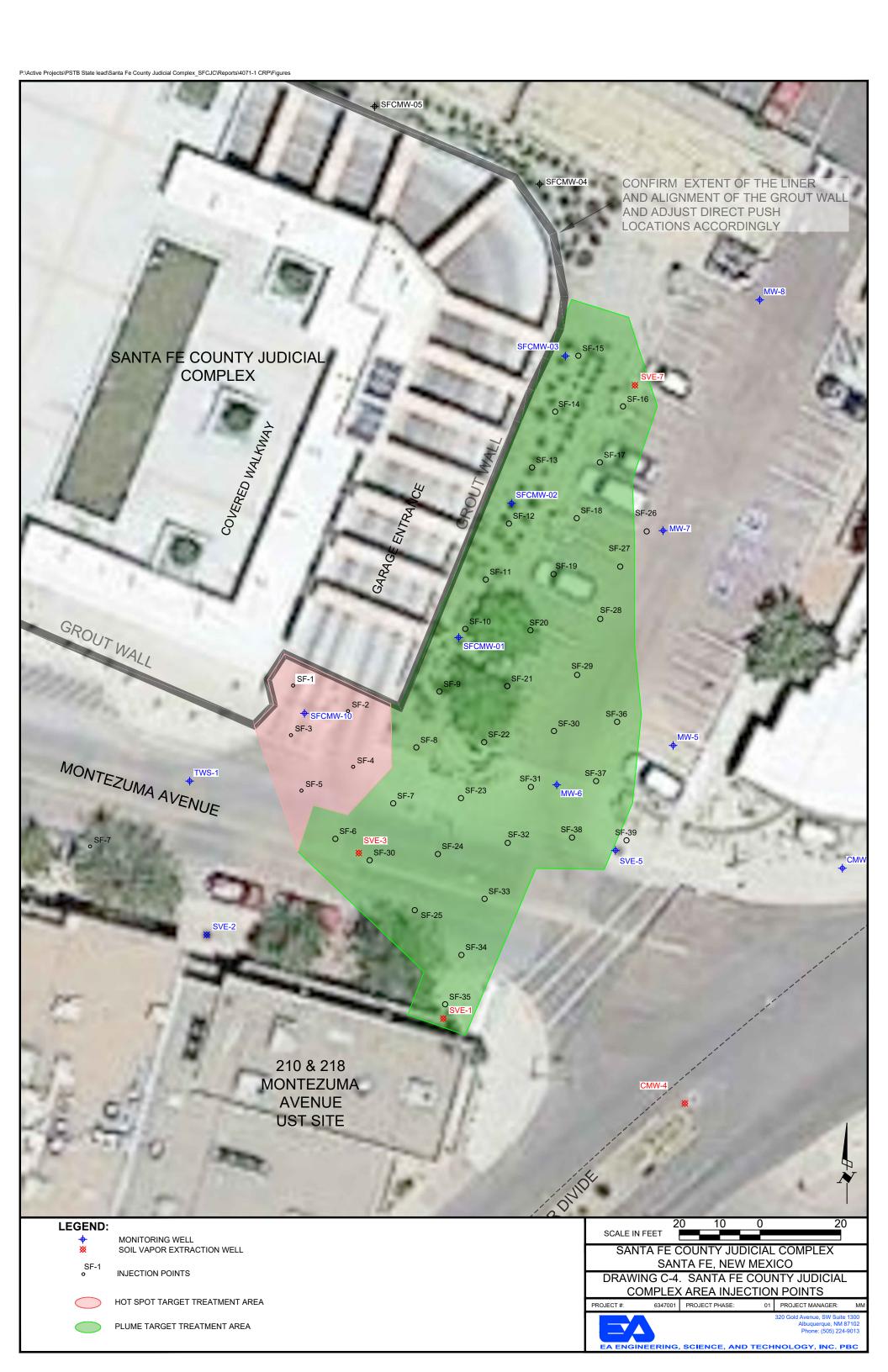
PETROFIX APPLICATION RATES SANTA FE COUNTY JUDICIAL COMPLEX, SANTA FE, NEW MEXICO

							PetroFix	Number of	Application Rate	Application Rate		Application	Application	Electron	Electron Acceptor Dose, Total,	Electron Acceptor Dose, Bulk,
Plume	Area	From	To	Thickness	Volume	Dose	Total Mass	Points	PetroFix	PetroFix	Volume	Rate Water	Rate Water	Acceptor	Bulk	Per Point
	SF	ft bgs	ft bgs	Feet	CY	lb/cy	lbs		lb/point	lb/ft	gal	gal/point	gal/ft			
De Vargas	2,200	25	40	15	1222	5.56	6,800	20	340	22.7	24,686	1,234	82	Sulfate	340	17
Capital 66 - CMW-1	500	20	25	5	93	8.64	800	3	267	53.3	1,870	623	125	Sulfate	40	13
Capital 66 - CMW-3R	700	20	32	12	311	5.14	1,600	4	400	33.3	6,284	1,571	131	Sulfate	80	20
Capital 66 - CMW-4	200	20	32	12	89	13.5	1,200	2	600	50.0	1,795	898	75	Sulfate	60	30
Design Center	5,000	32	62	30	5,556	8.86	49,220	13	3,786	126	112,208	8,631	288	Nitrate, Sulfate	2,461	189
SFCJC - Hot Spot	1,000	28	40	12	444	7.2	3,200	5	640	53	8,977	1,795	150	Nitrate, Sulfate	160	32
SFCJC - Plume	7,000	28	40	12	3,111	4.4	13,690	34	403	34	62,836	1,848	154	Nitrate, Sulfate	685	20
Total	16,600				10,826		76,510	81			218,656				3,826	
Inputs						Notes:			Nitrate/Sulfate Electron Acceptor Blend: Nitrate Free Electron Acceptor Blend:							
Target Effective Pore Volume	50%					CY	cubic foot		CAS#	# Chemical CAS# Chemical						
Effective Porosity	20%					ft	foot		7631-99-4	4 Sodium Nitrate, 50% by weight 778-80-5 Potassium Sulfate, 50% by weigh		ht				
Cubic feee in a cubic yard	27					gal	gallon		7783-20-2	3-20-2 Ammonium Sulfate, 50% by weight 7783-20-2 Ammonium Sulfate, 50% by weigh		ight				
Gallons in a cubic yard	201.974					LB	pound									
Electron Acceptor Dose	0.05			lb per pound o	f Petrofix	SF	square foot									



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC. PBC





APPENDIX G PUBLIC NOTICE

NOTICE OF SUBMISSION OF FINAL REMEDIATION PLAN

Dates of 110t					
Notice is her	eby given by F	A Engineering	Science at	nd Technology	Inc. PB

Dates of Notice:

Notice is hereby given by EA Engineering, Science, and Technology, Inc., PBC on behalf of the Petroleum Storage Tank Bureau of the New Mexico Environment Department of the submission of a Final Remediation Plan, as follows:

- 1. The Remediation Plan proposes actions to remediate a release of petroleum products into the environment.
- 2. The release occurred at: the Santa Fe County Judicial Complex State Lead Site (the Site), 327 Sandoval Street in Santa Fe, New Mexico. The remediation consists of amendment injections that may be performed at 418 Cerrillos Road; 328 and 408 Galisteo Street; 201, 204, 210 and 225 Montezuma Avenue; and 200 W. DeVargas Street and within Cerrillos Road and Montezuma Avenue adjacent to these addresses.
- 3. The Remediation Plan proposes corrective action consisting of injection of amendments (PetroFix a micron-scale, liquid activated carbon with alternative electron acceptors and nutrients) below the groundwater table to remediate the remaining petroleum contaminated "hot spots" at the site.
- 4. A copy of the Remediation Plan, including all data and modeling related to the Remediation Plan, can be viewed by interested parties at the NMED PSTB Santa Fe office at the address below. In addition, the Remediation Plan and all applicable data may be viewed at the following website: https://cloud.env.nm.gov/waste/pages/search.php?search=%21collection2275&k=e92deba587. Services may be arranged for translation of documents, for interpreters, and for obtaining services for persons with disabilities by contacting the NMED PSTB Project Manager. TDD or TTY users, please access phone numbers using the New Mexico Relay Network, 1 (800) 659-1779 (voice) and 1 (800) 659-8331 (TTY users).
- 5. Comments on the plan may be sent to the PSTB Project Manager: Ms. Susan von Gonten at the following address: New Mexico Environment Department, Petroleum Storage Tank Bureau, 2905 Rodeo Park Drive East, Bldg. 1, Santa Fe, NM 87505; by telephone at (505) 372-8153; or by email to susan.vongonten@state.nm.us. Comments sent to the project manager must also be mailed to the New Mexico Environment Department Secretary, Attn: Secretary Kenney, P.O. Box 5469, Santa Fe, New Mexico 87502-5469. Please include the name of the site "Santa Fe County Judicial Complex State Lead Site, Santa Fe, New Mexico" to ensure comments are correctly assigned to the site.

6.	Comments must	be received	l on or b	efore	

APPENDIX H IMPLEMENTATION SCHEDULE

APPENDIX H. SCHEDULE SANTA FE COUNTY JUDICIAL COMPLEX, SANTA FE, NEW MEXICO

Event	Time Period
FRP Submittal	Week 0
FRP Approval/Public Noticed Cleared	Week 6
Injection/Dishcharge Permit Application Approval	Week 15
Obtain Access Agreements	Week 12
Secure Site	Week 16
PetroFix Injection	Week 16 - 22
As-Built Report	Week 28
1st Qtr Monitoring Event	Week 28
2nd Qtr Monitoring Event	Week 40
3rd Qtr Monitoring Event	Week 52
4th Qtr Monitoring Event	Week 64

Notes:

Schedule is subject to change due to regulatory approval, permits, access, contractor, material, and equipment availability, forces of nature and other considerations outside of EA control.

APPENDIX H. SCHEDULE OF EVENTS SANTA FE COUNTY JUDICIAL COMPLEX, SANTA FE, NEW MEXICO

Event	Time Period
FRP Submittal	Week 0
FRP Approval/Public Noticed Cleared	Week 6
Obtain Access Agreements	Week 12
Injection/Dishcharge Permit Application Approval	Week 15
Submit Traffic Control Plans and all Necessary Permits to NMED PSTB	Week 15
Secure Site	Week 16
PetroFix Injection	Week 16 - 22
As-Built Report	Week 28
1st Qtr Monitoring Event	Week 28
2nd Qtr Monitoring Event	Week 40
3rd Qtr Monitoring Event	Week 52
4th Qtr Monitoring Event	Week 64

Notes:

Schedule is subject to change due to regulatory approval, permits, access, contractor, material, and equipment availability, forces of nature and other considerations outside of EA control.

APPENDIX I RESPONSE TO NMED PSTB COMMENTS

1. Amendment injections are planned near the five GWQB VRP compliance wells: SFCMW-1, SFCMW-2, SFCMW-3, SFCMW-7 and SFCMW-10. Please add a contingency that if these wells are found to be impacted by the PetroFix injections, then some or all of these compliance wells should be replaced.

Response. If one or more of the GWQB VRP compliance wells (SFCMW-1, SFCMW-2, SFCMW-3, SFCMW-7, and SFCMW-10) are found to be impacted as a result of the PetroFix injections, EA will consult with the NMED PSTB to evaluate whether one or more of the impacted wells need to be replaced. A subsection was added on page 11 to Section 4.2 of the FRP text.

2. Please provide a discussion of whether it is still conceivable that additional injections will be necessary to reduce the dissolved phase COCs to below NMWQCC standards despite the addition of other electron acceptors like the nitrate or sulfate that aid biodegradation by promoting the syntrophy?

Response. The design is robust and should achieve standards; however, if necessary, treatment of recalcitrant hot spots can be revisited. A paragraph was added on page 16 to Section 7.0 of the FRP text.

Section 4.2

 Page 8. Please provide the rational for assuming that the TPH-GRO concentrations in groundwater would be two times the sum of BTEXN concentrations and not higher. At Moberg's Garage & Texaco Station sites the TPH concentration was approximately 10 times the BTEXN concentrations.

Response. At Moberg's Garage, there is residual NAPL in hot spots. The TPH-GRO samples were collected near these hotspots, indicating sourcing of both BTEXN and TPH-GRO to the groundwater plume at a ratio of 1:10, which is not surprising. At the SFCJC, we do not suspect residual NAPL. BTEXN (in aggregate) has degraded or been substantially removed, and we expect similar behavior for the TPH-GRO (e.g., significant degradation). Therefore, a lower TPH to BTEXN ratio was applied.

• Page 10. The soil cuttings will be stockpiled, profiled and disposed of offsite. Please note whether the soil cuttings will be place in labeled drums while awaiting disposal and where the soil will be taken.

Response. Soil cuttings will be placed in appropriately labeled drums or roll-off bins pending profiling and disposal. The soil will be disposed of at a permitted facility, either the Gandy Marley disposal facility west of Tatum, New Mexico or the Rhino Environmental Services landfarm DP-1051 located 1.7 miles north of the New Mexico/Texas state line on Highway 54, Otero County, New Mexico. This statement was added as the sixth bullet on Page 10 to Subsection 4.2 of the FRP text.

• Page 10. The EA proposal states that the ROI and injection performance will be evaluated: EA will have the injection subcontractor push rods intermediate in the injection pattern at a rate of 10 percent. A pencil bailer will then be lowered, and a sample will be collected to check for Petro Fix. Petro Fix yields a black return. As needed, injection spacing may be tightened to ensure distribution. Please add this to the text and to Table 7 on page 91.

Response. The suggested text from the proposal was added as the fourth bullet on page 10 to Subsection 4.2 of the FRP text and to Table 7. It should be noted that the provided cost estimate is based on the spacing presented in the FRP. Dense soil and stiffness resulted in a modified injection methodology; therefore, any change in spacing is likely to impact cost.

• Please include a discussion of how the disruption to business operations will be mitigated during implementation of the remedial approach.

Response. Both the locations and number of amendment injection points for treating the four "hot spots" will require an off-hour work schedule. EA anticipates completing most of the amendment injection at night or on the weekend. Amendment injection in Montezuma Avenue and Cerrillos Road will require work to be performed exclusively at night due to the volume of traffic during the day. Other locations, such as the West De Vargas parking lot or the Saveur Bistro Restaurant (former Capital 66), might be accessible on one or both days of the weekend. EA will meet individually with property/business owners to determine the most appropriate time to perform the injections to limit disruptions to businesses.

Additionally, batch mixing can be performed away from the injection points, if necessary. High pressure hoses can be used to distribute amendment to the injection points from hundreds of feet away if required. This will allow for the separation of process and batch mixing areas from injection areas, an important feature in that many injection points are in heavy trafficked areas that will need to be accessed during off business hours or at night.

These paragraphs were added on page 12 to Section 4.3 of the FRP text.

• Please elaborate on how the drilling and amendment injections will be safely conducted in downtown Santa Fe.

Response. The majority of the amendment injection will be conducted at night or on the weekend when vehicular and pedestrian traffic are lighter. A robust traffic control plan will be developed to protect workers during amendment injection activities in the streets. Areas where injection activities are being performed will be appropriately barricaded and/or flagged to prevent unauthorized entry by the public. This paragraph was added on page 12 to Section 4.3 of the FRP text.

Section 6.0 Schedule for Implementation and Appendix H. Please add a statement that all access agreements, traffic control plans and necessary permits, such as the City of Santa Fe construction, ROW and excavation permits, GWQB UIC discharge permit, NMOSE well permits, etc. will be submitted to PSTB prior to commencement of field work associated with amendment injections. Please also include it on the Schedule in Appendix H.

Response. The above statement was added on page 13 to Section 4.3 of the FRP text and a submittal to NMED PSTB of the above was included on the Schedule in Appendix H.

Table 2. Summary of groundwater analytical results for VOCs. Please include footnotes explaining what the superscripts in the table denote.

Response. Footnotes were added to Table 2.

Table 6. Groundwater monitoring and performance assessment. Would adding iron and manganese to the groundwater sampling regime contribute to optimizing injections and evaluating the effectiveness of the injections?

Response. Iron and manganese were added to the monitoring regime shown in Table 6. Both would be used as indicators of reducing conditions and aid in evaluation of the injection progress.

Appendix A. Amendment Dosage

• Please provide the Regenesis Design Summary Sheets for the injections by treatment zone (similar to the ones provided in the Final Remediation Plan for the Moberg's Garage and Texaco station) for the PetroFix-water slurry and for mass of electron acceptors dosing.

Response. Appendix A contains the outputs from the Regenesis on-line calculator. The software package for the application of PetroFix does not provide the same level of detail as the one for ORC-A provided in the Moberg's Garage and Texaco Station FRP; therefore, similar output cannot be provided.

- The table provided in this Appendix showing the mass of PetroFix and volume of water required to prepare the slurry does not show how the Target Effective Pore Volume and Effective Porosity are used, nor whether an estimate of the soil contamination concentrations in the saturated zone was calculated based on the exceeding 2018-2019 groundwater concentrations and the soil-water partitioning coefficients for the COCs. Please clarify and provide Regenesis Design Summary Sheets, etc.
- Response. The provided Appendix A indicates "Target Effective Pore Volume of 50% and Estimated Effective Porosity of 20%" in the "Inputs" section of the "PetroFix Application Rates." The Target Effective Volume was based on a typical Regenesis value and effective porosity was based on the dense nature of the soil. As stated in the text and provided in Appendix A, the average exceeding 2018-2019 concentrations were the

inputs. PetroFix demand was determined using Regenesis software that determines the required PetroFix mass using groundwater concentrations.

Appendix C. HASP, Page 2. Chemical/Health Hazards of Concern: Petroleum Hydrocarbons (as TPH DRO) – is it TPH-**DRO** or TPH-**GRO**?

• Response. The text will be changed to read TPH-GRO.