SounPacific Environmental Services
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QUARTERLY GROUNDWATER MONITORING REPORT

Fourth Quarter 2005 (Fourteenth Quarterly)

Sampled on October 15, 2005

Job # SP-165

LOP # 1TDN059

Crescent Shell
890 L Street
Crescent City, California 95531

April 19, 2005

This *Quarterly Groundwater Monitoring Report* was prepared by SounPacific Environmental Services (SounPacific) staff for Big Oil & Tire Co. (BO&T). This report documents the results of the 14th sampling event of the Site's groundwater monitoring wells. This report includes data from previous studies conducted at the Site by Clearwater Group, Inc. (CGI) and SounPacific, and a review of relevant files conducted at Del Norte County Department of Environmental Health (DNCDEH). Crescent Shell (the Site) is located at 890 L Street, Crescent City, California (Figure 1).

SITE DESCRIPTION

The Site is located in downtown Crescent City, at the corner of Ninth and L Streets in Crescent City, California. L Street is used as the southbound lane of U.S. Highway 101. The lot remains vacant while the owner continues to investigate the lateral and vertical extent of contamination. Drainage is controlled by culverts that flow towards the ocean. Sewer and water services are supplied by public utilities (Figure 2).

SITE TOPOGRAPHY AND LAND USE

SounPacific understands that the Site is currently vacant and BO&T owns the property. The Site topography is relatively flat with the surrounding topography consisting of terrain that descends in an east to southeasterly direction (Figure 1). The surrounding vicinity includes a collection of commercial and residential properties. Skagg Auto Repair lies adjacent to the southwest property line. Various residential properties border the southeastern side of the Site, and L Street and Ninth Street run along the northwest and northeast sides of the property, respectively. The former Crescent Shell site is located within one mile of the Pacific Ocean as shown on Figure 1. A review of county records indicated that there is an ongoing investigation directly to the northeast of the Site across L Street.

SITE HISTORY

Previous studies from SounPacific and Clearwater Group, Inc. (CGI) indicated the following historical information:

1995 Preliminary Site Assessment (by Patric Lassiter)

On March 22, 1995, two (2) soil borings (B-1 and B-2) were drilled in order to complete a preliminary site assessment of the Crescent Shell site (Figure 3). Soil and groundwater samples were collected from both borings. Laboratory analytical reported elevated levels of Total Petroleum Hydrocarbons as gasoline (TPHg), benzene, toluene, xylenes, and ethylbenzene (BTXE), and TPH as diesel (TPHd) in both groundwater samples (Tables 1 and 2). In a letter dated December 22, 1995, the California Regional Water Quality Control Board, North Coast Region (NCRWQCB), requested that a work plan be prepared for further soil and groundwater investigation at the Site.

1995 UST Removal (Beacom)

On April 21, 1995, Beacom Construction of Fortuna, California (Beacom), removed one 550-gallon waste oil UST and one 1,000-gallon heating oil UST. Six (6) soil samples were collected

from the excavation sidewalls and one (1) groundwater sample was collected from the excavation pit (Tables 1 and 2). TPHd and TPH were reported at levels just above the reporting limits in a sample from the heating oil UST pit.

1997 Subsurface Investigation (CGI)

On September 29 and 30, 1997, CGI performed an investigation to define the lateral extent of the subsurface contamination. The investigation consisted of drilling eight (8) soil borings (B-3 through B-10) and installing three (3) monitoring wells (MW-1 through MW-3) (Figure 3). Analysis of soil samples reported elevated levels of hydrocarbon contaminants in borings MW-1 and B-3, located adjacent to the USTs (Table 1). Hydrocarbon contamination was detected in all groundwater samples analyzed (Table 2). In a letter dated April 28, 1998, the NCRWQCB requested a work plan for the installation of additional soil borings and monitoring wells in order to further define the extent of contamination.

1997-1998 Groundwater Monitoring Program (CGI)

A groundwater monitoring program was initiated on October 10, 1997, and continued for a period of three quarters. Groundwater samples from all monitoring wells (MW-1, MW-2, and MW-3) were collected and analyzed. This monitoring program was concluded on July 10, 1998, and results of the program are reported in the CGI *Quarterly Groundwater Sampling and Monitoring Report, Third Quarter 1998,* dated August 14, 1998.

2001 UST Removal (Beacom)

On January 10, 2001 Beacom removed three 5,000-gallon gasoline USTs and one 4,000-gallon gasoline UST from the Site. Monitoring well MW-3 was destroyed during the removal. Following these activities, no more USTs remained onsite.

2001 Subsurface Investigation (SounPacific)

On April 2 and 3, 2001, SounPacific staff performed a subsurface investigation at the Crescent Shell site in accordance with the *Offsite Subsurface Investigation Work Plan*, dated August 17, 1998 and the approved SounPacific *Work Plan Addendum*, dated September 26, 2000. This investigation was specifically aimed at delineating the vertical and horizontal extent of the MTBE contamination, as requested by the NCRWQCB in a correspondence dated July 25, 2000. The investigation consisted of drilling six (6) soil borings (B-11 through B-16) (Figure 3). Soil analytical results reported elevated levels of TPHg in borings B-14 and B-15, located adjacent to the previous dispenser islands (Table 1). Elevated levels of TPHg, BTXE, and TPHd were also detected in groundwater samples from these borings (Table 2).

At this time SounPacific recommended further investigation of the downgradient extent of the contamination and interim source removal activities. In a letter dated March 19, 2002, the NCRWQCB concurred with these recommendations and requested a work plan. In addition, the NCRWQCB requested that quarterly monitoring of the two onsite monitoring wells (MW-1 and MW-2) be initiated. SounPacific staff incorporated wells MW-1 and MW-2 into a groundwater-monitoring program on May 5, 2002.

2003 Subsurface Investigation (SounPacific)

On April 14 through 16, and April 22, 2003, SounPacific staff performed a subsurface investigation at the Crescent Shell site to determine the downgradient extent and source of the contamination. All investigative work was performed in accordance with the approved SounPacific *Subsurface Investigation Work Plan*, dated June 3, 2002. The investigation consisted of drilling six (6) offsite soil borings (B-18 to B-20 and B-25 to B-27) and five (5) onsite soil borings (B-17 and B-21 to B-24) (Figure 3). Borings B-24, B-25, B-26, and B-27 were converted to monitoring wells MW-7, MW-4, MW-5, and MW-6, respectively. Laboratory analysis of soil samples reported elevated concentrations of TPHg and BTXE in borings B-19 and B-26, which were located offsite on Highway 101, downgradient from the previous dispenser islands and USTs (Table 1). Laboratory analytical also reported elevated

concentrations of TPHg and BTXE in groundwater samples from boring B-19. At this time, SounPacific recommended that a source delineation work plan be prepared. This work plan would include: additional borings in the vicinity of borings B-14 and B-15 to assess contaminant degradation over time; additional borings to the west, north, and south of boring B-15 to define the boundaries of the soil plume; and additional borings across Highway 101, downgradient from boring B-19, to assess the possible downgradient migration of the soil and groundwater plumes. The NCRWQCB concurred with these recommendations in a letter dated June 28, 2004.

2005 Subsurface Investigation (SounPacific)

During February 28, March 1, 4, & 13, and April 11, 2005, SounPacific staff performed a subsurface investigation at the Crescent Shell site to determine the down gradient extent and source of the contamination. All investigative work was performed in accordance with the approved SounPacific *Subsurface Investigation Work Plan*, dated August 6, 2004. The investigation consisted of drilling three (3) offsite soil borings (B-33 through B-35) and five (5) onsite soil borings (B-28 through B-32) (Figure 3). Laboratory analytical reported elevated concentrations of TPHg in soil samples from boring B-29, which was in the vicinity of the previous boring B-15 (Table 1). In a four year period, these concentrations decreased by a factor of 10^3. Elevated concentrations of TPHg were also detected in soil samples from boring B-30, located in the vicinity of the previous USTs. Elevated concentrations of TPHg were reported in groundwater samples from all borings, along with concentrations of BTXE and TPHd (Table 2). In a correspondence dated August 17, 2004, the NCRWQCB requested that one of the downgradient borings be converted to a monitoring well, based on soil and groundwater analytical results. Boring B-34 was converted to monitoring well MW-8. Based on the results of this investigation, SounPacific recommended further investigation to delineate the extent of contamination downgradient of monitoring well MW-8, and that two sets of nested wells be installed to evaluate any vertical migration of contaminants. The NCRWQCB concurred with these recommendations and requested that a work plan be prepared.

RESULTS OF QUARTERLY SAMPLING

The current groundwater-monitoring program was implemented at the Site in May 2002 for wells MW-1 and MW-2, and expanded to MW-4, MW-5, MW-6, and MW-7 on April 22, 2003, following their installation. An additional monitoring well MW-8 was installed on March 4, 2005, and incorporated into the monitoring program. The current monitoring program will continue until further notice. The program consists of recording quarterly water level data and collecting quarterly groundwater samples for laboratory analysis. Water level data is used to develop a figure which displays the groundwater gradient and average flow direction using standard three-point calculations. Analytical results from groundwater samples collected from the monitoring wells during quarterly sampling events present hydrocarbon contamination levels in the groundwater beneath the Site. Monitoring wells were gauged and sampled on October 15, 2005.

FIELD DATA

Wells gauged:	MW-1, MW-2, MW-4, MW-5, MW-6, MW-7, and MW-8
Groundwater:	Ranged from 24.79 to 26.09 feet above mean sea level (Table 3)
Floating product:	Sheen detected in MW-1and MW-4
Flow Direction:	SE (Figure 4)
Groundwater gradient:	0.01 feet per foot (ft/ft) (Figure 4)

On October 15, 2005, the depth to groundwater in the Site's seven monitoring wells ranged from 10.69 feet below top of casing (btoc) in well MW-1 to 13.09 feet btoc in MW-8. When corrected to mean sea level, water level elevations ranged from 24.79 feet above mean sea level (amsl) to in MW-8 to 26.09 feet amsl in MW-1. Groundwater levels for the October 15, 2005 monitoring event, along with historical level and elevations are included in Table 3. Groundwater flow on October 15, 2005 was towards the southeast at a gradient of 0.01 feet per foot. The groundwater flow and gradient are graphically depicted in Figure 4. Prior to sampling, all wells were purged; the groundwater field parameters for each well are presented below.

MONITORING WELL MW-1 GROUNDWATER FIELD PARAMETERS

Time	Total Vol. Removed/ gal	pH	Temp./ F	Cond./ ms(cm)$^{-1}$
5:11 pm	0	7.22	64.34	0.557
5:14	0.5	7.22	65.18	0.508
5:20	1	7.24	65.36	0.493
5:23	1.5	7.23	65.34	0.493

MONITORING WELL MW-2 GROUNDWATER FIELD PARAMETERS

Time	Total Vol. Removed/ gal	pH	Temp./ F	Cond./ ms(cm)$^{-1}$
5:35 pm	0	7.14	64.21	0.468
5:41	0.25	7.14	64.98	0.486
5:46	0.5	7.11	65.35	0.495
5:49	0.75	7.14	65.22	0.495

MONITORING WELL MW-4 GROUNDWATER FIELD PARAMETERS

Time	Total Vol. Removed/ gal	pH	Temp./ F	Cond./ ms(cm)$^{-1}$
4:21 pm	0	7.42	63.13	0.172
4:28	1.25	7.20	63.58	0.172
4:32	2.5	7.18	63.47	0.173
4:46	3.75	7.35	63.12	0.177

MONITORING WELL MW-5 GROUNDWATER FIELD PARAMETERS

Time	Total Vol. Removed/ gal	pH	Temp./ F	Cond./ ms(cm)$^{-1}$
3:59 pm	0	7.36	62.43	0.167
4:04	1.2	7.25	62.23	0.165
4:07	2.3	7.15	62.29	0.167
4:09	3.5	6.98	62.65	0.169

MONITORING WELL MW-6 GROUNDWATER FIELD PARAMETERS

Time	Total Vol. Removed/ gal	pH	Temp./ F	Cond./ ms(cm)$^{-1}$
3:35 pm	0	7.31	60.46	0.165
3:42	1.1	7.10	60.05	0.165
3:44	1.2	7.02	60.04	0.164
3:47	1.3	6.93	59.80	0.170

MONITORING WELL MW-7 GROUNDWATER FIELD PARAMETERS

Time	Total Vol. Removed/ gal	pH	Temp./ F	Cond./ ms(cm)$^{-1}$
4:48 pm	0	7.37	62.11	0.178
4:53	1.2	7.28	62.41	0.178
4:55	2.4	7.21	62.50	0.178
4:58	3.6	7.13	62.48	0.177

MONITORING WELL MW-8 GROUNDWATER FIELD PARAMETERS

Time	Total Vol. Removed/ gal	pH	Temp./ F	Cond./ ms(cm)$^{-1}$
3:03 pm	0	7.14	63.60	0.575
3:09	0.2	7.13	63.56	0.542
3:12	0.4	7.16	63.91	0.536
3:15	0.6	7.16	63.94	0.535

ANALYTICAL RESULTS

Sampling locations: MW-1, MW-2, MW-4, MW-5, MW-6, MW-7 and MW-8

Analyses performed: TPHg, BTXE, MTBE, DIPE, TAME, ETBE, TBA, TPHd, TPHmo

Laboratories Used: Basic Labs, Redding, California (ELAP #1677)

The analytical results for the current monitoring event are presented below and graphically depicted in Figure 4. The laboratory report is included as Appendix A. The historical analytical results for all monitoring wells, since the implementation of groundwater monitoring are included as Table 4.

	MW-1 (ppb)	MW-2 (ppb)	MW-4 (ppb)	MW-5 (ppb)	MW-6 (ppb)	MW-7 (ppb)	MW-8 (ppb)
TPHg:	**71,100**	**28,500**	ND < 50	**33,300**	ND < 50	ND < 50	**37,200**
Benzene:	**1,840**	**516**	ND < 0.5	**855**	ND < 0.5	ND < 0.5	**2,920**
Toluene:	**20,400**	**8,990**	ND < 0.5	**11,100**	ND < 0.5	ND < 0.5	**8,110**
Xylenes:	**11,800**	**7,060**	ND < 1.0	**7,020**	ND < 1.0	ND < 1.0	**7,340**
Ethylbenzene:	**4,180**	**1,220**	ND < 0.5	**1,230**	ND < 0.5	ND < 0.5	**3,160**
MTBE:	**9,810**	**2,060**	ND < 1.0	**3,940**	ND < 1.0	ND < 1.0	**1,950**
DIPE:	ND < 10.0	ND < 5.0	ND < 0.5	ND < 10.0	ND < 0.5	ND < 0.5	ND < 10.0
TAME:	**1,350**	**388**	ND < 0.5	**610**	ND < 0.5	ND < 0.5	**331**
ETBE:	ND < 10.0	ND < 5.0	ND < 0.5	ND < 10.0	ND < 0.5	ND < 0.5	ND < 10.0
TBA:	ND < 100	ND < 500	ND < 50	ND < 1,000	ND < 50	ND < 50	ND < 1,000
TPHd:	**3,420**	**434**	ND < 50	ND < 50	ND < 50	ND < 50	**2,670**
TPHmo:	ND < 50	**71**	ND < 50	ND < 50	ND < 50	ND < 50	**52**

ND = non-detectable

COMMENTS AND RECOMMENDATIONS

On October 15, 2005, the 14th groundwater monitoring event for the three onsite monitoring wells and four offsite monitoring wells was conducted at the Crescent Shell at 890 L Street in Crescent City, California. A summary of the results are presented below.

- The depth to groundwater ranged between 10.69 feet btoc to 13.09 feet btoc. Groundwater flow was towards the southeast at a gradient of 0.01 feet per foot.

- Groundwater samples were collected and analyzed for TPHg, BTXE, five fuel oxygenates, TPHd, and TPHmo. Laboratory results reported TPHg in four (4) of the seven (7) wells at concentrations ranging from 28,500 ppb (MW-2) to 71,100 ppb (MW-1). All the BTXE compounds were reported in wells MW-1, MW-2, MW-5, and MW-8.

In these wells, benzene concentrations ranging from 516 ppb (MW-2) to 2,920 ppb (MW-8), toluene concentrations ranging between 8,110 ppb (MW-8) to 20,400 ppb (MW-1), xylenes levels ranging from 7,020 ppb (MW-5) to 11,800 ppb (MW-1), and ethylbenzene concentrations ranging between 1,220 ppb (MW-2) and 4,180 ppb (MW-1). MTBE and TAME were also reported in the same four wells, with MTBE concentrations ranging from 1,950 ppb (MW-8) to 9,810 ppb (MW-1) and TAME concentrations ranging from 331 ppb (MW-8) to 1,350 ppb (MW-1). TPHd was reported in three (3) wells at concentrations ranging from 434 ppb (MW-2) to 3,420 ppb (MW-1). TPHmo was reported in two (2) wells at concentrations of 52 ppb (MW-8) and 71 ppb (MW-2). No petroleum hydrocarbons were reported in wells MW-4, MW-6, or MW-7.

Based upon these results the following observations and conclusions have been made.

- TPHg has consistently been reported in wells MW-1, MW-2, MW-5, and MW-8 at fluctuating concentrations. TPHg was reported in these wells during the recent sampling event at the highest concentration since the inception of the monitoring program. TPHg was reported once in wells MW-4 and MW-6, and twice in well MW-7 since the introduction of the groundwater monitoring. The historical fluctuations of TPHg concentrations over time for all wells are shown in Figures 6 through 12.

- Benzene was detected in wells MW-1, MW-2, MW-5, and MW-8 at the highest concentration since the inception of the monitoring program. Benzene was detected in MW-1 in seven of the last fifteen sampling events. Benzene was detected in MW-2 in fourteen of the last fifteen sampling events and in MW-5 consistently during the last eleven sampling events. Benzene was detected three times in MW-8 consistently since the second quarter 2005. The historical fluctuations of benzene concentrations over time for all wells are shown in Figures 6 through 12.

- Toluene was detected in wells MW-1, MW-2, MW-5, and MW-8 at the highest

concentration since the inception of the monitoring program. Toluene was detected in MW-1 in nine of the last fifteen sampling events. Toluene was detected in MW-2 in eight of the last fifteen sampling events and in MW-5 during seven of the last eleven sampling events. Toluene was detected three times in MW-8 consistently since the second quarter 2005. The historical fluctuations of toluene concentrations over time for all wells are shown in Figures 6 through 12.

- Xylenes were detected in wells MW-1, MW-2, MW-5, and MW-8 at the highest concentration since the inception of the monitoring program. Xylenes were consistently detected in MW-1 during fourteen of the last fifteen sampling events. Xylenes were detected in MW-2 in nine of the last fifteen sampling events and were consistently detected in MW-5 except during the first quarter 2004 when the non-detect levels were reported. Xylenes were detected three times in MW-8 consistently since the second quarter 2005. The historical fluctuations of xylenes concentrations over time for all wells are shown in Figures 6 through 12.

- Ethylbenzene was detected in wells MW-1, MW-2, MW-5, and MW-8 at the highest concentration since the inception of the monitoring program. Ethylbenzene was detected in wells MW-1, MW-2, MW-5, and MW-8 consistently since the inception of the monitoring. Ethylbenzene was detected in well MW-4 for the first time during the second quarter of 2005. Ethylbenzene was detected once in wells MW-6 and MW-7 during the fourth quarter 2004 at levels slightly higher than the reporting limits. The historical fluctuations of ethylbenzene concentrations over time for all wells are shown in Figures 6 through 12.

- MTBE was reported for the first time in well MW-1 since the fourth quarter 2002 and for the first time ever in wells MW-2, MW-5, and MW-8, at concentrations in the range of 10^3 ppb. MTBE was reported once in well MW-4 (0.7 ppb) during the well installation

sampling event. MTBE has never been reported at any other time in any wells.

- TAME was reported for the first time in wells MW-1, MW-2, and MW-5, and for the second time in well MW-8. TAME has never been reported at any other time in any wells.

- TPHd has consistently been reported in wells MW-1 and MW-2 since the inception of the monitoring, except during the first quarter of 2004. In wells MW-1 and MW-2 TPHd concentrations have decreased significantly since the last quarter of sampling. In wells MW-4, MW-6, and MW-7, TPHd was reported for the first time (second quarter 2005) since the inception of the monitoring. In well MW-5, TPHd was reported during the well installation sampling event and the second quarter of 2005. In well MW-8, TPHd has been reported consistently during the last three sampling events. The historical fluctuations of TPHd concentrations over time for all wells are shown in Figures 6 through 12.

- TPHmo was reported in well MW-1 during three of the last fifteen sampling events. TPHmo was detected for the third time in well MW-2, and the second time in well MW-8 during this quarter of sampling. In the remaining wells, TPHmo was detected in each well only once during the second quarter 2005.

Based on the results of the October 2005 monitoring event and historical results, the following future activities are proposed.

- Groundwater monitoring will be continued until further notice. Quarterly groundwater level measurements will be collected from the three (3) onsite and the four (4) offsite monitoring wells to determine groundwater flow direction and gradient. Collected

groundwater samples will be analyzed for TPHg, BTXE, five-fuel oxygenates/additives, TPHd, and TPHmo.

- Based on the current elevated levels in the groundwater at this site and historical analytical data, SounPacific has determined that remedial action is necessary for the Site. Proposed remedial alternatives were recommended in the Report of Findings from the recent subsurface investigation, which was submitted in September 2005. SounPacific is currently preparing a Subsurface Investigation Work Plan for further groundwater delineation and remedial action as requested in a letter dated, October 19, 2005, from the NCRWQCB.

CERTIFICATION

This report was prepared under the direct supervision of a California registered geologist at SounPacific. All information provided in this report including statements, conclusions and recommendations are based solely upon field observations and analyses performed by a state-certified laboratory. SounPacific is not responsible for laboratory errors.

SounPacific promises to perform all its work in a manner that is currently used by members in similar professions working in the same geographic area. SounPacific will do whatever is reasonable to ensure that data collection is accurate. Please note however, that rain, buried utilities, and other factors can influence groundwater depths, directions and other factors beyond what SounPacific could reasonably determine.

SounPacific

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ATTACHMENTS

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Tables & Chart

Table 1

Soil Analytical Results

Crescent Shell
890 L Street
Crescent City, California 95531

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	TPHd (ppm)	TPHmo (ppm)	TPH (ppm)	Lead (ppm)
B-1 @ 4.5'	B-1	3/22/1995	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	----	**2.1**	ND < 2.0	----	ND < 5
B-2 @ 4.5'	B-2	3/22/1995	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	----	ND < 1.0	ND < 2.0	----	ND < 5
B.P.CC W-Oil Pipe	Piping Run	4/21/1995	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	----	ND < 1.0	----	ND < 50	----
Oil Tank 5' South	UST Pit	4/21/1995	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	----	ND < 1.0	----	ND < 50	----
Pipe Heat Oil	Piping Run	4/21/1995	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	----	ND < 1.0	----	ND < 50	----
B.P.CC South 5'	UST Pit	4/21/1995	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	----	**3.1**	----	**56**	----
B.P.CC North 5'	UST Pit	4/21/1995	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	----	ND < 1.0	----	ND < 50	----
Oil Tank North 5'	UST Pit	4/21/1995	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	----	ND < 1.0	----	ND < 50	----
B-3 @ 7.5'	B-3	9/29/1997	**1.2**	ND < 0.005	ND < 0.005	**0.0057**	**0.0059**	ND < 0.05	**6.8**	**58**	----	----
B-3 @ 10.5'	B-3	9/29/1997	**770**	ND < 0.05	ND < 1.5	**10.7**	**2.5**	ND < 0.5	**64**	ND < 10	----	----
B-4 @ 5.5'	B-4	9/29/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
B-4 @ 10'	B-4	9/29/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
B-5 @ 6'	B-5	9/29/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
B-5 @ 10.5'	B-5	9/29/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
B-6 @ 5.5'	B-6	9/29/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
B-6 @ 10'	B-6	9/29/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	**2.1**	ND < 10	----	----
B-7 @ 5.5'	B-7	9/29/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
B-7 @ 10'	B-7	9/29/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
B-8 @ 5.5'	B-8	9/30/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
B-8 @ 10.5'	B-8	9/30/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	**0.12**	**12**	**260**	----	----
B-10 @ 5'	B-10	9/30/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
B-10 @ 10'	B-10	9/30/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
MW-1 @ 5.5'	MW-1	9/30/1997	**20**	ND < 0.005	ND < 0.04	ND < 0.4	ND < 0.2	**0.069**	**4.5**	ND < 10	----	----
MW-1 @ 11'	MW-1	9/30/1997	**7,000**	**4.9**	ND < 20	**77**	**100**	ND < 13	**75**	ND < 10	----	----
MW-2 @ 5'	MW-2	9/30/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	**0.13**	ND < 1.0	ND < 10	----	----
MW-2 @ 10'	MW-2	9/30/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	ND < 1.0	ND < 10	----	----
MW-3 @ 5'	MW-3	9/30/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	**3.6**	**61**	----	----
MW-3 @ 10'	MW-3	9/30/1997	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05	**15**	**330**	----	----
SP-165-B-11 @ 5'	B-11	4/3/2001	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 10	**20.0**	----	----
SP-165-B-11 @ 8'	B-11	4/3/2001	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 10	ND < 10	----	----
SP-165-B-12 @ 4'	B-12	4/3/2001	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 10	ND < 10	----	----
SP-165-B-12 @ 8'	B-12	4/3/2001	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 10	ND < 10	----	----
SP-165-B-13 @ 4'	B-13	4/3/2001	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	**0.007**	ND < 10	ND < 10	----	----
SP-165-B-13 @ 6'	B-13	4/3/2001	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	**0.011**	ND < 10	ND < 10	----	----
SP-165-B-13 @ 8'	B-13	4/3/2001	**0.06**	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	**0.011**	ND < 10	ND < 10	----	----
SP-165-B-14 @ 4'	B-14	4/2/2001	**9.72**	ND < 0.025	**0.053**	**0.834**	**0.082**	**0.097**	ND < 10	ND < 10	----	----
SP-165-B-14 @ 8'	B-14	4/2/2001	**1,310,000**	ND < 0.750	**20.9**	**178**	**27**	ND < 0.750	**125**	ND < 10	----	----
SP-165-B-15 @ 4'	B-15	4/2/2001	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	**0.026**	ND < 10	ND < 10	----	----
SP-165-B-15 @ 5'	B-15	4/3/2001	**2,900,000**	ND < 0.750	ND < 0.750	**318.3**	**50.9**	ND < 5.0	**2,480**	**23.0**	----	----
SP-165-B-15 @ 8'	B-15	4/2/2001	**4,100,000**	ND < 7.5	**12.5**	**421**	**71.8**	ND < 7.5	**2,700**	**150**	----	----
SP-165-B-16 @ 4'	B-16	4/2/2001	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	**0.011**	ND < 10	ND < 10	----	----
SP-165-B-16 @ 8'	B-16	4/2/2001	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	**0.016**	ND < 10	ND < 10	----	----

Table 1 (cont.)
Soil Analytical Results
Crescent Shell
890 L Street
Crescent City, California 95531

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	DIPE (ppm)	TAME (ppm)	ETBE (ppm)	TBA (ppm)	TPHd (ppm)	TPHmo (ppm)
SB-17@3'	B-17	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-17@7'	B-17	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-17@11'	B-17	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-17@14'	B-17	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-17@20'	B-17	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 4.0	**50**
SB-18@3'	B-18	4/14/2003	ND < 9.3	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-18@7'	B-18	4/14/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-18@10'	B-18	4/14/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	**12**	**41**
SB-19@3'	B-19	4/14/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-19@8'	B-19	4/14/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	**4.3**	ND < 40
SB-19@11'	B-19	4/14/2003	ND < 1.0	**0.48**	ND < 0.46	**0.71**	**0.46**	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-19@13'	B-19	4/14/2003	**4.0**	ND < 0.46	ND < 0.46	**0.68**	**0.60**	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	**3.6**	ND < 10
SB-19@14.5'	B-19	4/14/2003	**9,900**	**12**	**3.2**	**157.7**	**140**	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	**1.8**	ND < 10
SB-19@22'	B-19	4/14/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-20@3.5'	B-20	4/14/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	**3.8**	ND < 10
SB-20@7.5'	B-20	4/14/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-20@11'	B-20	4/14/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-20@15'	B-20	4/14/2003	**120**	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	**82**	ND < 10
SB-20@17'	B-20	4/14/2003	ND < 9.6	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-20@20'	B-20	4/14/2003	ND < 9.3	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-21@3'	B-21	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-21@7'	B-21	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-21@10'	B-21	4/16/2003	**1.0**	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-21@16'	B-21	4/16/2003	**280**	ND < 0.555	ND < 0.555	ND < 1.11	**2.3**	ND < 0.555	ND < 0.555	ND < 0.555	ND < 0.555	ND < 0.555	**99**	ND < 10
SB-21@18'	B-21	4/16/2003	**1.1**	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-21@20'	B-21	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-22@3'	B-22	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-22@8'	B-22	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-22@10'	B-22	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-22@12'	B-22	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-22@16'	B-22	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	**0.006**	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-22@20'	B-22	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-23@3'	B-23	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-23@7'	B-23	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-23@10'	B-23	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-23@14'	B-23	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-23@17.5'	B-23	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-23@20'	B-23	4/16/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10

Table 1 (cont.)
Soil Analytical Results
Crescent Shell
890 L Street
Crescent City, California 95531

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	DIPE (ppm)	TAME (ppm)	ETBE (ppm)	TBA (ppm)	TPHd (ppm)	TPHmo (ppm)
SB-24@3'	B-24	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-24@6'	B-24	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-24@10'	B-24	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 1.0
SB-24@14'	B-24	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 1.0
SB-24@20'	B-24	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 1.0
SB-25@3'	B-25	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-25@8'	B-25	4/15/2003	**5**	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-25@11'	B-25	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-25@14'	B-25	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-25@20'	B-25	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-26@3'	B-26	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-26@7.5'	B-26	4/15/2003	ND < 1.0	**0.007**	ND < 0.005	ND < 0.01	**0.014**	**0.006**	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-26@11.5'	B-26	4/15/2003	**20**	ND < 0.90	ND < 0.90	**4.8**	**3.2**	ND < 0.90	ND < 0.90	ND < 0.90	ND < 0.90	ND < 0.90	**24**	ND < 10
SB-26@14'	B-26	4/15/2003	**5,500**	**14**	**5.2**	**435**	**130**	ND < 0.95	ND < 0.95	ND < 0.95	ND < 0.95	ND < 0.95	**25**	ND < 10
SB-26@20'	B-26	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	**0.051**	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-27@3'	B-27	4/15/2003	**3.7**	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-27@5'	B-27	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-27@10'	B-27	4/15/2003	**1.3**	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-27@14'	B-27	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-27@20'	B-27	4/15/2003	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 1.0	ND < 10
SB-28@ 3'	B-28	2/28/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-28@6'	B-28	2/28/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	**40**
SB-28@8'	B-28	2/28/2005	**23.2**	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 5.00	ND < 10	ND < 10
SB-28@12'	B-28	2/28/2005	**104**	ND < 0.500	ND < 0.500	ND < 0.500	**0.592**	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 5.00	**1,110**	ND < 100
SB-29@4'	B-29	2/28/2005	**7,410**	ND < 12.5	**26.2**	**726**	**132**	ND < 12.5	ND < 12.5	ND < 12.5	ND < 12.5	ND < 125	**1,240**	ND < 100
SB-29@8'	B-29	2/28/2005	**3,220**	ND < 5.00	ND < 5.00	**188**	**71.5**	ND < 5.00	ND < 5.00	ND < 5.00	ND < 5.00	ND < 50.0	**333**	ND < 30
SB-29@12'	B-29	2/28/2005	**6,480**	ND < 12.5	ND < 12.5	**999**	**172**	ND < 12.5	ND < 12.5	ND < 12.5	ND < 12.5	ND < 125	ND < 10	ND < 10
SB-30@2'	B-30	2/28/2005	**2,060**	ND < 10.0	ND < 10.0	ND < 10.0	ND < 10.0	ND < 10.0	ND < 10.0	ND < 10.0	ND < 10.0	ND < 100	**1,020**	ND < 100
SB-30@5'	B-30	2/28/2005	**2,840**	ND < 5.00	ND < 5.00	ND < 5.00	**14.1**	ND < 5.00	ND < 5.00	ND < 5.00	ND < 5.00	ND < 50.0	**1,170**	ND < 100
SB-30@8'	B-30	2/28/2005	**2,630**	ND < 5.00	ND < 5.00	**6.6**	**18.6**	ND < 5.00	ND < 5.00	ND < 5.00	ND < 5.00	ND < 50.0	**331**	ND < 30
SB-30@10'	B-30	2/28/2005	**5,480**	ND < 10.0	ND < 10.0	**10.1**	**36.4**	ND < 10.0	ND < 10.0	ND < 10.0	ND < 10.0	ND < 100	**3,430**	ND < 500
SB-31@4'	B-31	2/282005	**0.453**	ND < 0.005	ND < 0.005	**0.0058**	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-31@6'	B-31	2/28/2005	**0.840**	**0.014**	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-31@9'	B-31	2/28/2005	**17.0**	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 5.00	ND < 10	**15**
SB-31@12'	B-31	2/28/2005	**168**	ND < 0.500	ND < 0.500	ND < 0.500	**1.21**	ND < 0.500	ND < 0.500	ND < 0.500	ND < 0.500	ND < 5.00	ND < 10	ND < 10
SB-32@4'	B-32	2/28/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-32@8'	B-32	2/28/2005	**0.168**	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-32@10'	B-32	2/28/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-32@12'	B-32	2/28/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10

Table 1 (cont.)
Soil Analytical Results
Crescent Shell
890 L Street
Crescent City, California 95531

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	DIPE (ppm)	TAME (ppm)	ETBE (ppm)	TBA (ppm)	TPHd (ppm)	TPHmo (ppm)
SB-33@3'	B-33	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	**26**
SB-33@6'	B-33	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-33@9'	B-33	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-33@12	B-33	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-34@3'	B-34	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-34@6'	B-34	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-34@9'	B-34	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-34@12'	B-34	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-35@3'	B-35	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-35@6.5'	B-35	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-35@9'	B-35	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10
SB-35@12'	B-35	3/1/2005	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 10	ND < 10

Notes:

TPHg: TPH as gasoline
MTBE: Methyl tertiary butyl ether
DIPE: Diisopropyl ether
TAME: Tertiary amyl methyl ether
ETBE: Ethyl tertiary butyl ether
TBA: Tertiary butanol
TPHd: TPH as diesel
TPHmo: TPH as motor oil
ppm: parts per million = µg/gram = mg/kg = 1000 ppb
ND: Not detected. Sample was not detected at or above the method detection limit as shown.

Table 2
Groundwater Analytical Results
Crescent Shell
890 L Street
Crescent City, California 95531

Sample ID	Sample Location	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPHd (ppb)	TPHmo (ppb)	TPH (ppb)	Lead (ppb)
B-1	B-1	3/22/1995	31,000	3,700	200	620	1,900	----	----	----	----	----	6,400	ND < 100	----	89
B-2	B-2	3/22/1995	160,000	25,000	16,000	14,000	4,000	----	----	----	----	----	4,600	ND < 100	----	72
B.P.CC	B.P.CC	4/21/1995	ND < 50	ND < 0.5	0.7	ND < 1.0	ND < 0.5	----	----	----	----	----	ND < 50	----	1,700	----
B-4	B-4	9/29/1997	250	ND < 0.5	ND < 5.0	1.6	1.0	ND < 5.0	----	----	----	----	51	ND < 500	----	----
B-5	B-5	9/29/1997	1,300	ND < 0.5	15	ND < 4.0	ND < 1.0	ND < 5.0	----	----	----	----	98	ND < 500	----	----
B-7	B-7	9/29/1997	110	ND < 0.5	ND < 2.0	ND < 1.0	ND < 0.5	ND < 5.0	----	----	----	----	ND < 50	ND < 500	----	----
B-9	B-9	9/30/1997	21,000	6,300	240	770	1,800	22,000	----	----	----	----	780	ND < 500	----	----
B-10	B-10	9/30/1997	1,800	89	ND < 10	13	50	10	----	----	----	----	350	ND < 500	----	----
SP165-B-11 @ 10'	B-11	4/3/2001	9,440	505	45.6	575	1,960	16.0	----	----	----	----	2,360	ND < 50	----	----
SP165-B-11 @ 20'	B-11	4/3/2001	221	9.7	2.0	12.6	37.7	ND < 2.0	----	----	----	----	467	88.0	----	----
SP165-B-11 @ 30'	B-11	4/3/2001	361	4.8	6.1	33.0	16.4	ND < 2.0	----	----	----	----	1,980	82.0	----	----
SP165-B-11 @ 36'	B-11	4/3/2001	327	10.5	8.4	40.0	26.9	ND < 2.0	----	----	----	----	3,830	120	----	----
SP165-B-12 @ 10'	B-12	4/3/2001	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	3.7	----	----	----	----	108	ND < 50	----	----
SP165-B-12 @ 20'	B-12	4/3/2001	ND < 50	ND < 0.3	0.3	0.7	0.4	4.0	----	----	----	----	284	ND < 50	----	----
SP165-B-12 @ 30'	B-12	4/3/2001	ND < 50	ND < 0.3	0.3	1.7	0.9	ND < 2.0	----	----	----	----	380	ND < 50	----	----
SP165-B-12 @ 36'	B-12	4/3/2001	ND < 50	0.5	0.7	2.8	2.3	ND < 2.0	----	----	----	----	2,620	190	----	----
SP165-B-13 @ 10'	B-13	4/3/2001	1,110	ND < 3.0	ND < 3.0	ND < 6.0	ND < 3.0	ND < 20	----	----	----	----	302	ND < 50	----	----
SP165-B-13 @ 20'	B-13	4/3/2001	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	ND < 2.0	----	----	----	----	ND < 50	ND < 50	----	----
SP165-B-13 @ 30'	B-13	4/3/2001	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	ND < 2.0	----	----	----	----	143	ND < 50	----	----
SP165-B-13 @ 36'	B-13	4/3/2001	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	ND < 2.0	----	----	----	----	1,480	95.0	----	----
SP165-B-14 @ 10'	B-14	4/2/2001	902,000	4,260	8,870	184,000	16,500	ND < 20,000	----	----	----	----	775,000	3,730	----	----
SP165-B-14 @ 20'	B-14	4/2/2001	217	5.2	17.0	28.7	11.2	ND < 2.0	----	----	----	----	2,810	ND < 50	----	----
SP165-B-15 @ 10'	B-15	4/2/2001	7,660	789	69.7	849	489	2.3	----	----	----	----	1,730	ND < 50	----	----
SP165-B-15 @ 20'	B-15	4/2/2001	5,330	20.2	35.3	956	172	2.5	----	----	----	----	5,620	ND < 50	----	----
SP165-B-16 @ 10'	B-16	4/2/2001	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	ND < 2.0	----	----	----	----	70.0	ND < 50	----	----
SP165-B-16 @ 20'	B-16	4/2/2001	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	ND < 2.0	----	----	----	----	952	ND < 50	----	----
SBGW-17	B-17	4/16/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 200	ND < 2,000	----	----
SBGW-18	B-18	4/14/2003	52	6.0	ND < 0.5	ND < 1	ND < 0.5	0.8	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	----	----
SBGW-19 @ 6.4'	B-19	4/14/2003	36,000	3,300	320	5,830	2,900	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	3,500	ND < 500	----	----
SBGW-19 @ 23'	B-19	4/14/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	0.7	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	----	----
SBGW-20	B-20	4/14/2003	66	3.1	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	----	----
SBGW-21	B-21	4/16/2003	5,300	8.1	1.5	7.2	260	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	540	ND < 500	----	----
SBGW-22	B-22	4/16/2003	340	2.4	ND < 0.5	ND < 1	9.8	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	160	ND < 500	----	----
SBGW-23	B-23	4/16/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	170	ND < 1,000	----	----
SBGW-28	B-28	2/28/2005	6,630	ND < 10.0	ND < 10.0	32.2	964	ND < 20.0	ND < 10.0	ND < 10.0	ND < 10.0	ND < 1,000	1,400	ND < 50	----	----
SBGW-29	B-29	2/28/2005	34,700	405	83.5	9,580	2,040	ND < 50.0	ND < 25.0	ND < 25.0	ND < 25.0	ND < 2,500	5,750	ND < 100	----	----
SBGW-30	B-30	2/28/2005	6,470	ND < 10.0	ND < 10.0	49.8	1,110	ND < 20.0	ND < 10.0	ND < 10.0	ND < 10.0	ND < 1,000	2,910	77	----	----
SBGW-31	B-31	2/28/2005	3,600	10.6	8.6	275	434	ND < 8.0	ND < 4.0	ND < 4.0	ND < 4.0	ND < 400	503	ND < 50.0	----	----
SBGW-32	B-32	2/28/2005	128	ND < 0.5	ND < 0.5	ND < 1.0	3.2	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	69	ND < 50	----	----
SBGW-33	B-33	3/1/2005	3,300	7.3	ND < 0.5	8.0	10	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 10	490	ND < 170	----	----
SBGW-34	B-34	3/1/2005	23,000	2,900	81	1,600	2,000	ND < 12	ND < 1.0	ND < 1.0	ND < 1.0	ND < 10	740	ND < 170	----	----
SBGW-35	B-35	3/1/2005	810	9.4	ND < 0.5	1.4	39	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 10	75	ND < 170	----	----

Notes:

TPHg: TPH as gasoline
MTBE: Methyl tertiary butyl ether
DIPE: Diisopropyl ether
TAME: Tertiary amyl methyl ether
ETBE: Ethyl tertiary butyl ether
TBA: Tertiary butanol
TPHd: TPH as diesel
TPHmo: TPH as motor oil
ppb: parts per billion = µg/liter = 0.001 mg/l = 0.001 ppm.
ND: Not detected. Sample was not detected at or above the method detection limit as shown.

Table 3
Water Levels
Crescent Shell
890 L Street
Crescent City, California 95531

Sample Location	Date	Depth to Bottom/ Feet BToC	Survey Height/ Feet AMSL	Depth to Water/ Feet BToC	Adjusted Elevation/ Feet AMSL	Thickness of Floating Product/ Feet	Corrected Adjusted Elevation/ feet AMSL
MW-1	5/6/2002	13.41	36.78	7.70	29.08	----	----
	8/4/2002	13.44	36.78	9.88	26.90	----	----
	11/6/2002	13.42	36.78	11.69	25.09	----	----
	2/7/2003	13.47	36.78	3.97	32.81	----	----
	4/22/2003	13.65	36.78	3.82	32.96	----	----
	5/22/2003	13.65	36.78	5.64	31.14	SHEEN	----
	6/26/2003	13.65	36.78	8.01	28.77	0.01	28.77
	7/22/2003	13.65	36.78	9.00	27.78	0.00	27.78
	8/25/2003	13.65	36.78	9.92	26.86	0.00	26.86
	9/22/2003	13.65	36.78	10.51	26.27	0.00	26.27
	10/23/2003	13.65	36.78	11.11	25.67	0.00	25.67
	11/25/2003	13.65	36.78	10.63	26.15	0.00	26.15
	12/16/2003	13.65	36.78	7.41	29.37	0.00	29.37
	1/23/2004	13.65	36.78	4.41	32.37	0.00	32.37
	2/24/2004	13.65	36.78	2.60	34.18	0.00	34.18
	3/26/2004	13.65	36.78	4.51	32.27	0.00	32.27
	4/29/2004	13.65	36.78	5.75	31.03	0.00	31.03
	7/30/2004	13.68	36.78	9.94	26.84	0.00	26.84
	11/2/2004	13.67	36.78	10.39	26.39	0.00	26.39
	1/30/2005	13.40	36.78	6.76	30.02	0.00	30.02
	4/11/2005	13.39	36.78	3.60	33.18	0.00	33.18
	7/10/2005	13.40	36.78	8.05	28.73	0.00	28.73
	10/15/2005	13.70	36.78	10.69	26.09	0.00	26.09
MW-2	5/6/2002	13.48	37.20	9.25	27.95	----	----
	8/4/2002	13.49	37.20	11.24	25.96	----	----
	11/6/2002	13.50	37.20	12.90	24.30	----	----
	2/7/2003	13.52	37.20	6.38	30.82	----	----
	4/22/2003	13.41	37.20	6.33	30.87	----	----
	5/22/2003	13.41	37.20	7.74	29.46	0.00	29.46
	6/26/2003	13.41	37.20	9.58	27.62	0.00	27.62
	7/22/2003	13.41	37.20	10.43	26.77	0.00	26.77
	8/25/2003	13.41	37.20	11.26	25.94	0.00	25.94
	9/22/2003	13.41	37.20	11.8	25.40	0.00	25.4
	10/23/2003	13.41	37.20	12.35	24.85	0.00	24.85
	11/25/2003	13.41	36.78	12.83	23.95	0.00	23.95
	12/16/2003	13.41	36.78	7.89	28.89	0.00	28.89
	1/23/2004	13.41	37.20	6.69	30.51	0.00	30.51
	2/24/2004	13.41	37.20	4.37	32.83	0.00	32.83
	3/26/2004	13.41	37.20	6.33	30.87	0.00	30.87
	4/29/2004	13.41	37.20	7.65	29.55	0.00	29.55
	7/30/2004	13.74	37.20	11.27	25.93	0.00	25.93
	11/2/2004	13.43	37.20	11.55	25.65	0.00	25.65
	1/30/2005	13.75	37.20	8.37	28.83	0.00	28.83
	4/11/2005	13.77	37.20	5.58	31.62	0.00	31.62
	7/10/2005	13.72	37.20	9.57	27.63	0.00	27.63
	10/15/2005	13.45	37.20	11.94	25.26	0.00	25.26
MW-4	4/22/2003	18.92	36.86	5.20	31.66	----	----
	5/22/2003	18.91	36.86	6.74	30.12	0.01	30.13
	6/26/2003	18.92	36.86	9.64	27.22	0.01	27.23
	7/22/2003	18.92	36.86	9.51	27.35	0.01	27.36
	8/25/2003	18.92	36.86	10.38	26.48	0.01	26.49
	9/22/2003	18.92	36.86	10.94	25.92	0.00	25.92
	10/23/2003	18.92	36.86	11.52	25.34	0.00	25.34
	11/25/2003	18.92	36.78	11.04	25.74	0.00	25.74
	12/16/2003	18.92	36.78	8.05	28.73	0.00	28.73
	1/23/2004	18.92	36.86	5.65	31.21	0.00	31.21
	2/24/2004	18.92	36.86	3.82	33.04	0.00	33.04
	3/26/2004	18.92	36.86	5.79	31.07	0.00	31.07
	4/29/2004	18.92	36.86	6.79	30.07	0.00	30.07
	7/30/2004	18.91	36.86	10.43	26.43	0.00	26.43
	11/2/2004	18.91	36.86	10.83	26.03	0.00	26.03
	1/30/2005	18.91	36.86	7.54	29.32	0.00	29.32
	4/11/2005	18.93	36.86	4.82	32.04	0.00	32.04
	7/10/2005	18.95	36.86	8.67	28.19	0.00	28.19
	10/15/2005	18.95	36.86	11.10	25.76	0.00	25.76

Corrected Adjusted Elevation =
Adjusted Groundwater Elevation + (Thickness of product x (density of product / density of water))
Density of product = 0.73 g/mL (density of oil)
Density of water = 1g/mL

Table 3 (cont.)
Water Levels
Crescent Shell
890 L Street
Crescent City, California 95531

Sample Location	Date	Depth to Bottom/ Feet BToC	Survey Height/ Feet AMSL	Depth to Water/ Feet BToC	Adjusted Elevation/ Feet AMSL	Thickness of Floating Product/ Feet	Corrected Adjusted Elevation/ feet AMSL
MW-5	4/22/2003	18.83	37.27	6.17	31.10	----	----
	5/22/2003	18.87	37.27	7.60	29.67	0.01	29.68
	6/26/2003	18.83	37.27	9.46	27.81	SHEEN	----
	7/22/2003	18.83	37.27	10.31	26.96	SHEEN	----
	8/25/2003	18.83	37.27	11.17	26.10	0.00	26.10
	9/22/2003	18.83	37.27	11.71	25.56	0.00	25.56
	10/23/2003	18.83	37.27	12.26	25.01	0.00	25.01
	11/25/2003	18.83	36.78	12.77	24.01	0.00	24.01
	12/16/2003	18.83	36.78	8.09	28.69	0.00	28.69
	1/23/2004	18.83	37.27	6.53	30.74	0.00	30.74
	2/24/2004	18.83	37.27	4.39	32.88	0.00	32.88
	3/26/2004	18.83	37.27	6.41	30.86	0.00	30.86
	4/29/2004	18.83	37.27	7.55	29.72	0.00	29.72
	7/30/2004	18.81	37.27	11.18	26.09	0.00	26.09
	11/2/2004	18.86	37.27	11.48	25.79	0.00	25.79
	1/30/2005	18.79	37.27	8.26	29.01	0.00	29.01
	4/11/2005	18.78	37.27	5.51	31.76	0.00	31.76
	7/10/2005	18.87	37.27	9.47	27.80	0.00	27.80
	10/15/2005	18.86	37.27	11.83	25.44	0.00	25.44
MW-6	4/22/2003	18.74	37.80	7.35	30.45	----	----
	5/22/2003	18.69	37.80	8.73	29.07	SHEEN	----
	6/26/2003	18.74	37.80	10.48	27.32	0.00	27.32
	7/22/2003	18.74	37.80	11.31	26.49	0.00	26.5
	8/25/2003	18.74	37.80	12.13	25.67	0.00	25.67
	9/22/2003	18.74	37.80	12.67	25.13	0.00	25.13
	10/23/2003	18.74	37.80	13.18	24.62	0.00	24.62
	11/25/2003	18.74	36.78	12.66	24.12	0.00	24.12
	12/16/2003	18.74	36.78	8.42	28.36	0.00	28.36
	1/23/2004	18.74	37.80	7.71	30.09	0.00	30.09
	2/24/2004	18.74	37.80	5.24	32.56	0.00	32.56
	3/26/2004	18.74	37.80	7.15	30.65	0.00	30.65
	4/29/2004	18.74	37.80	8.60	29.20	0.00	29.20
	7/30/2004	18.69	37.80	12.14	25.66	0.00	25.66
	11/2/2004	18.63	37.80	12.37	25.43	0.00	25.43
	1/30/2005	18.70	37.80	9.26	28.54	0.00	28.54
	4/11/2005	18.68	37.80	6.51	31.29	0.00	31.29
	7/10/2005	18.64	37.80	10.47	27.33	0.00	27.33
	10/15/2005	18.65	37.80	11.78	26.02	0.00	26.02
MW-7	4/22/2003	18.31	36.88	4.3	32.57	----	----
	5/22/2003	18.30	36.88	5.95	30.93	0.00	30.93
	6/26/2003	18.31	36.88	8.29	28.59	0.00	28.59
	7/22/2003	18.31	36.88	9.29	27.59	0.00	27.59
	8/25/2003	18.31	36.88	10.23	26.65	0.00	26.65
	9/22/2003	18.31	36.88	10.81	26.07	0.00	26.07
	10/23/2003	18.31	36.88	11.38	25.50	0.00	25.50
	11/25/2003	18.31	36.78	10.84	25.94	0.00	25.94
	12/16/2003	18.31	36.78	6.75	30.03	0.00	30.03
	1/23/2004	18.31	36.88	4.80	32.08	0.00	32.08
	2/24/2004	18.31	36.88	2.65	34.23	0.00	34.23
	3/26/2004	18.31	36.88	4.59	32.29	0.00	32.29
	4/29/2004	18.31	36.88	5.93	30.95	0.00	30.95
	7/30/2004	18.30	36.88	10.21	26.67	0.00	26.67
	11/2/2004	18.22	36.88	10.53	26.35	0.00	26.35
	1/30/2005	18.31	36.88	6.84	30.04	0.00	30.04
	4/11/2005	18.23	36.88	3.76	33.12	0.00	33.12
	7/10/2005	18.45	36.88	8.30	28.58	0.00	28.58
	10/15/2005	18.42	36.88	10.95	25.93	0.00	25.93
MW-8	4/11/2005	14.20	37.88	7.32	30.56	0.00	30.56
	7/10/2005	14.22	37.88	10.92	26.96	0.00	26.96
	10/15/2005	14.20	37.88	13.09	24.79	0.00	24.79

Notes:

BToC: Below Top of Casing

AMSL: Above Mean Sea Level

Corrected Adjusted Elevation = Adjusted Groundwater Elevation + (Thickness of product x (density of product / density of water))

Density of product = 0.73 g/mL (density of oil)

Density of water = 1g/mL

Table 4 (cont.)
Groundwater Analytical Results from Monitoring Wells
Crescent Shell
890 L Street
Crescent City, California 95531

Sample Location	Annual Event	Sample Event	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPHd (ppb)	TPHmo (ppb)
MW-5	Second Quarter	Well Installation	4/22/2003	**4,800**	**98**	**20**	**530**	**86**	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	**1,500**	ND < 500
	Third Quarter	Fifth Quarterly	7/22/2003	**130**	**5.3**	ND < 0.5	**4.4**	**7.2**	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fourth Quarter	Sixth Quarterly	10/23/2003	**130**	**22**	ND < 0.5	**2.6**	**13**	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	First Quarter	Seventh Quarterly	1/23/2004	**170**	**3.9**	ND < 0.5	ND < 0.5	**3.2**	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Second Quarter	Eighth Quarterly	4/29/2004	**270**	**34**	**1.4**	**32.7**	**15**	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Third Quarter	Ninth Quarterly	7/30/2004	**73**	**11**	ND < 0.5	**2.2**	**11**	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fourth Quarter	Tenth Quarterly	11/2/2004	**140**	**26**	**0.5**	**13.0**	**25**	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	First Quarter	Eleventh Quarterly	1/30/2005	**75.4**	**9.1**	**0.6**	**6.3**	**9.1**	ND < 1.0	ND < 0.5	ND < 5.0	ND < 5.0	ND < 50	ND < 50	ND < 50
	Second Quarter	Twelfth Quarterly	4/11/2005	**19,200**	**5.2**	**9,270**	**13.2**	**3.8**	ND < 5.0	ND < 2.5	ND < 2.5	ND < 2.5	ND < 250	**23,300**	**7,290**
	Third Quarter	Thirteenth Quarterly	7/10/2005	**16,600**	**68.0**	**2,120**	**3,970**	**655**	ND < 50.0	ND < 25.0	ND < 25.0	ND < 25.0	ND < 2,500	**156**	ND < 50
	Fourth Quarter	Fourteenth Quarterly	10/15/2005	**33,300**	**855**	**11,100**	**7,020**	**1,230**	**3,940**	ND < 10.0	**610**	ND < 10.0	ND < 1,000	ND < 50	ND < 50
MW-6	Second Quarter	Well Installation	4/22/2003	**82**	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Third Quarter	Fifth Quarterly	7/22/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fourth Quarter	Sixth Quarterly	10/23/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	First Quarter	Seventh Quarterly	1/23/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 5.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Second Quarter	Eighth Quarterly	4/29/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Third Quarter	Ninth Quarterly	7/30/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fourth Quarter	Tenth Quarterly	11/2/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	**0.7**	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	First Quarter	Eleventh Quarterly	1/30/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 5.0	ND < 5.0	ND < 50	ND < 50	ND < 50
	Second Quarter	Twelfth Quarterly	4/11/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	**183**	**94**
	Third Quarter	Thirteenth Quarterly	7/10/2005	ND < 50.0	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	ND < 50	ND < 50
	Fourth Quarter	Fourteenth Quarterly	10/15/2005	ND < 50.0	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	ND < 50	ND < 50
MW-7	Second Quarter	Well Installation	4/22/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Third Quarter	Fifth Quarterly	7/22/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fourth Quarter	Sixth Quarterly	10/23/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	First Quarter	Seventh Quarterly	1/23/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Second Quarter	Eighth Quarterly	4/29/2004	**75**	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Third Quarter	Ninth Quarterly	7/30/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fourth Quarter	Tenth Quarterly	11/2/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	**0.5**	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	First Quarter	Eleventh Quarterly	1/30/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 5.0	ND < 5.0	ND < 50	ND < 50	ND < 50
	Second Quarter	Twelfth Quarterly	4/11/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	**150**	**140**
	Third Quarter	Thirteenth Quarterly	7/10/2005	**53.2**	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	ND < 50	ND < 50
	Fourth Quarter	Fourteenth Quarterly	10/15/2005	ND < 50.0	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	ND < 50	ND < 50
MW-8	Second Quarter	Twelfth Quarterly	4/11/2005	**5,710**	**785**	**614**	**653**	**680**	ND < 12.5	ND < 6.2	ND < 6.2	ND < 6.2	ND < 625	**40,600**	**12,300**
	Third Quarter	Thirteenth Quarterly	7/10/2005	**16,800**	**1,540**	**47.5**	**2,420**	**1,990**	ND < 25.0	ND < 12.5	**38.8**	ND < 12.5	ND < 1,250	**2,950**	ND < 50
	Fourth Quarter	Fourteenth Quarterly	10/15/2005	**37,200**	**2,920**	**8,110**	**7,340**	**3,160**	**1,950**	ND < 10.0	**331**	ND < 10.0	ND < 1,000	**2,670**	**52**

Notes:
TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tertiary butyl ether
DIPE: Diisopropyl ether
TAME: Tertiary amyl methyl ether
ETBE: Ethyl tertiary butyl ether
TBA: Tertiary butanol
TPHd: Total petroleum hydrocarbons as diesel
TPHmo: Total Petroleum hydrocarbons as motor oil
ppb: parts per billion = µg/l = 1,000 mg/l = 0.001 ppm.
ND: Not detected. Sample was not detected at or above the method detection limit as shown.

Table 4

Groundwater Analytical Results from Monitoring Wells

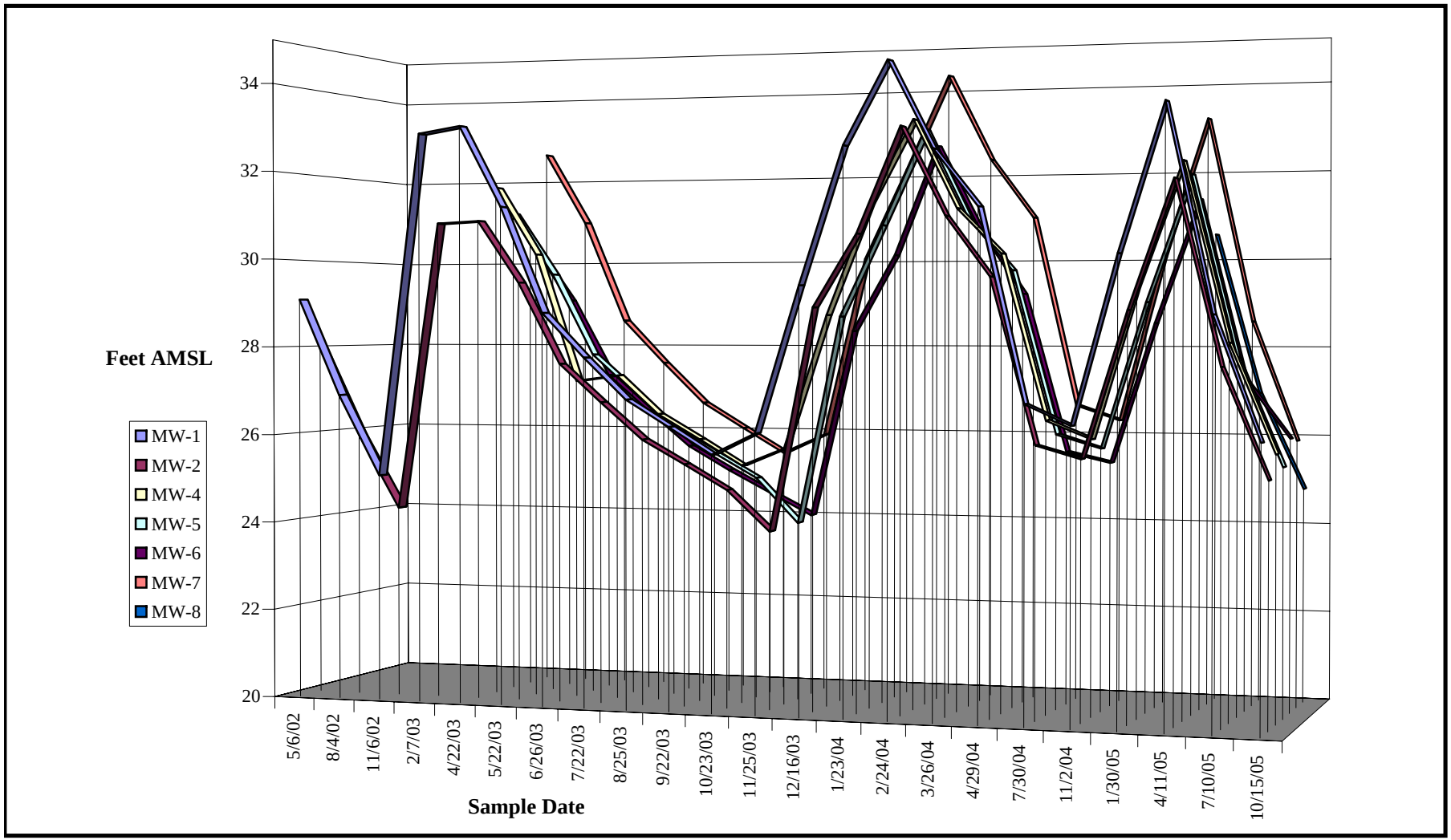
Crescent Shell
890 L Street
Crescent City, California 95531

Sample Location	Annual Event	Sample Event	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPHd (ppb)	TPHmo (ppb)
MW-1	Second Quarter	First Quarterly	5/5/2002	52,800	ND < 300	ND < 300	ND < 300	3,730	ND < 300	ND < 500	ND < 500	ND < 500	ND < 100,000	3,180	822
	Third Quarter	Second Quarterly	8/3/2002	10,400	ND < 60	ND < 60	859	5,000	ND < 400	ND < 100	ND < 100	ND < 100	ND < 20,000	4,670	ND < 50
	Fourth Quarter	Third Quarterly	11/6/2002	6,030	ND < 60	103	313	4,370	349	ND < 100	ND < 100	ND < 100	ND < 20,000	2,080	ND < 50
	First Quarter	Fourth Quarterly	2/7/2003	14,000	32	37	212	2,200	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	1,800	ND < 500
	Second Quarter	Well Installation	4/22/2003	13,000	ND < 50	ND < 50	190	1,900	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	4,000	ND < 500
	Third Quarter	Fifth Quarterly	7/22/2003	920	11	40	266	1,100	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	6,800	ND < 500
	Fourth Quarter	Sixth Quarterly	10/23/2003	21,000	18	51	235	6,100	ND < 10	ND < 10	ND < 10	ND < 10	ND < 100	4,900	ND < 500
	First Quarter	Seventh Quarterly	1/23/2004	7,600	73	ND < 50	130	1,800	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	ND < 50	ND < 500
	Second Quarter	Eighth Quarterly	4/29/2004	16,000	ND < 50	ND < 50	91	2,000	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	4,400	ND < 500
	Third Quarter	Ninth Quarterly	7/30/2004	13,000	ND < 50	ND < 50	110	3,700	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	6,200	ND < 500
	Fourth Quarter	Tenth Quarterly	11/2/2004	14,000	ND < 50	76	304	4,200	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	4,100	ND < 500
	First Quarter	Eleventh Quarterly	1/30/2005	8,040	21.0	11.0	1,940	1,550	ND < 20.0	ND < 10.0	ND < 100	ND < 100	ND < 1,000	3,340	ND < 50
	Second Quarter	Twelfth Quarterly	4/11/2005	16,300	ND < 10	4,770	57.6	1,990	ND < 20.0	ND < 10.0	ND < 10.0	ND < 10.0	ND < 1,000	8,340	1,830
	Third Quarter	Thirteenth Quarterly	7/10/2005	22,200	34.0	2,220	4,560	2,180	ND < 50.0	ND < 25.0	ND < 25.0	ND < 25.0	ND < 2,500	16,100	2,690
	Fourth Quarter	Fourteenth Quarterly	10/15/2005	71,100	1,840	20,400	11,800	4,180	9,810	ND < 10.0	1,350	ND < 10.0	ND < 1,000	3,420	ND < 50
MW-2	Second Quarter	First Quarterly	5/5/2002	1,440	5.1	ND < 0.3	2.6	54	ND < 2.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 100	380	ND < 50
	Third Quarter	Second Quarterly	8/3/2002	1,280	96.6	4.4	11.8	433	ND < 2.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 100	1,300	ND < 50
	Fourth Quarter	Third Quarterly	11/6/2002	479	75.1	4.1	15	237	ND < 2.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 100	379	ND < 50
	First Quarter	Fourth Quarterly	2/7/2003	470	2.2	ND < 0.5	ND < 1	0.6	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	90	ND < 500
	Second Quarter	Well Installation	4/22/2003	740	2.0	ND < 0.5	ND < 1	5.7	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	270	ND < 500
	Third Quarter	Fifth Quarterly	7/22/2003	2,000	11	1.8	10	120	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	530	ND < 500
	Fourth Quarter	Sixth Quarterly	10/23/2003	3,100	180	7.8	22	770	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	1,000	ND < 500
	First Quarter	Seventh Quarterly	1/23/2004	150	1.0	ND <0.5	ND < 1	1.2	ND <0.5	ND <0.5	ND <0.5	ND <0.5	ND < 5.0	ND < 50	ND < 500
	Second Quarter	Eighth Quarterly	4/29/2004	1,400	1.1	ND < 0.5	ND < 1	8.2	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	300	ND < 500
	Third Quarter	Ninth Quarterly	7/30/2004	2,100	6.7	2.5	6.2	240	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	890	ND < 500
	Fourth Quarter	Tenth Quarterly	11/2/2004	2,000	12	ND < 5	ND < 15	720	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	560	ND < 500
	First Quarter	Eleventh Quarterly	1/30/2005	566	0.5	ND < 0.5	ND < 1.0	0.5	ND < 1.0	ND < 1.0	ND < 5.0	ND < 5.0	ND < 50.0	218	ND < 50
	Second Quarter	Twelfth Quarterly	4/11/2005	10,300	ND < 5.0	5,100	12.1	5.7	ND < 10.0	ND < 5.0	ND < 5.0	ND < 5.0	ND < 500	128,000	39,800
	Third Quarter	Thirteenth Quarterly	7/10/2005	1,670	3.3	63.2	159	29.3	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	31,300	7,150
	Fourth Quarter	Fourteenth Quarterly	10/15/2005	28,500	516	8,990	7060	1220	2060	ND < 5.0	388	ND < 5.0	ND < 500	434	71
MW-4	Second Quarter	Well Installation	4/22/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	0.7	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Third Quarter	Fifth Quarterly	7/22/2003	78	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fourth Quarter	Sixth Quarterly	10/23/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	First Quarter	Seventh Quarterly	1/23/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Second Quarter	Eighth Quarterly	4/29/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Third Quarter	Ninth Quarterly	7/30/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fourth Quarter	Tenth Quarterly	11/2/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	First Quarter	Eleventh Quarterly	1/30/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND <5.0	ND < 5.0	ND < 50	ND < 50	ND < 50
	Second Quarter	Twelfth Quarterly	4/11/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	0.7	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	303	132
	Third Quarter	Thirteenth Quarterly	7/10/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	ND < 50	ND < 50
	Fourth Quarter	Fourteenth Quarterly	10/15/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	ND < 50	ND < 50

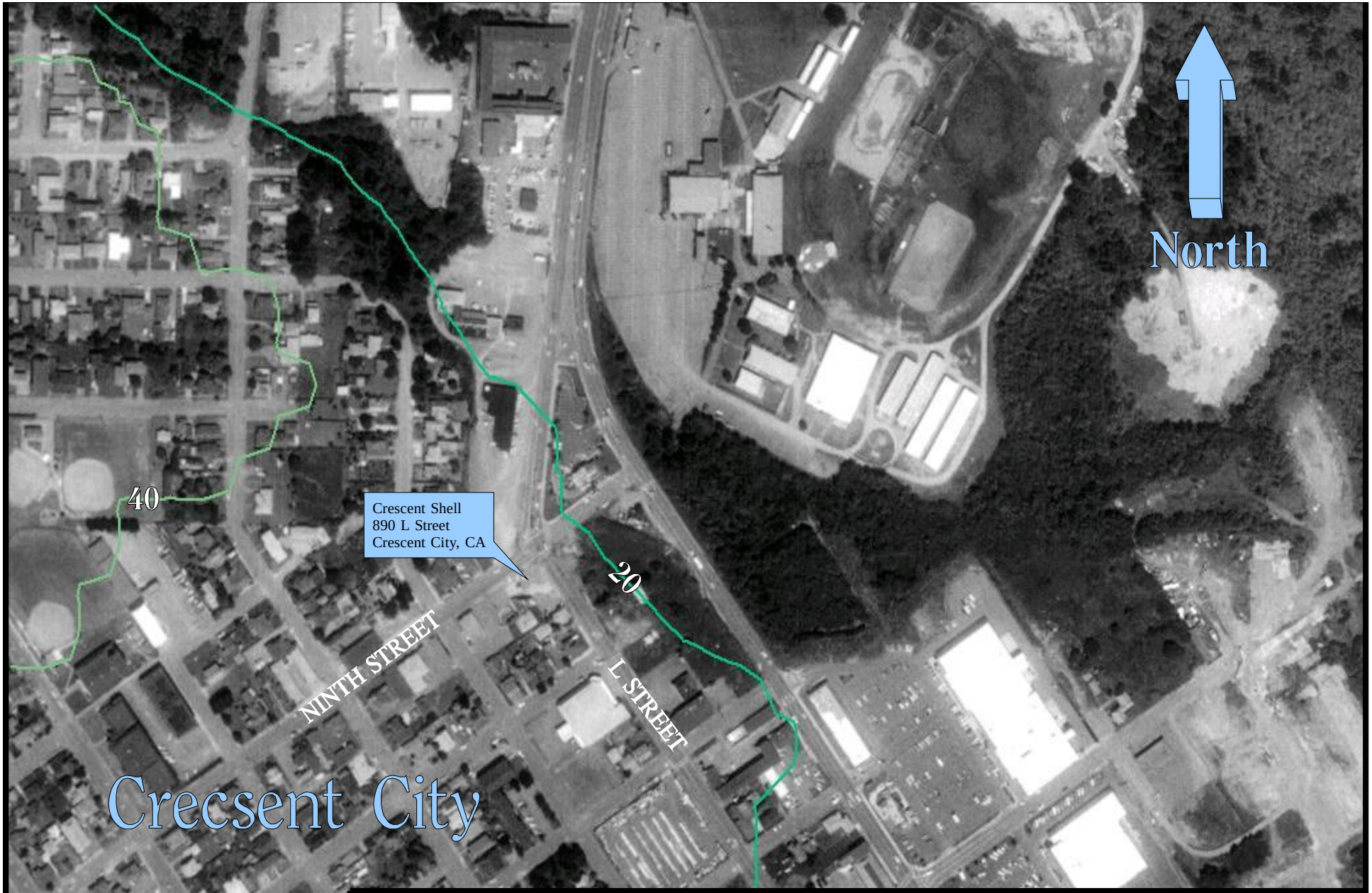
Chart 1

Hydrograph

Crescent Shell
890 L Street
Crescent City, California 95531



Figures

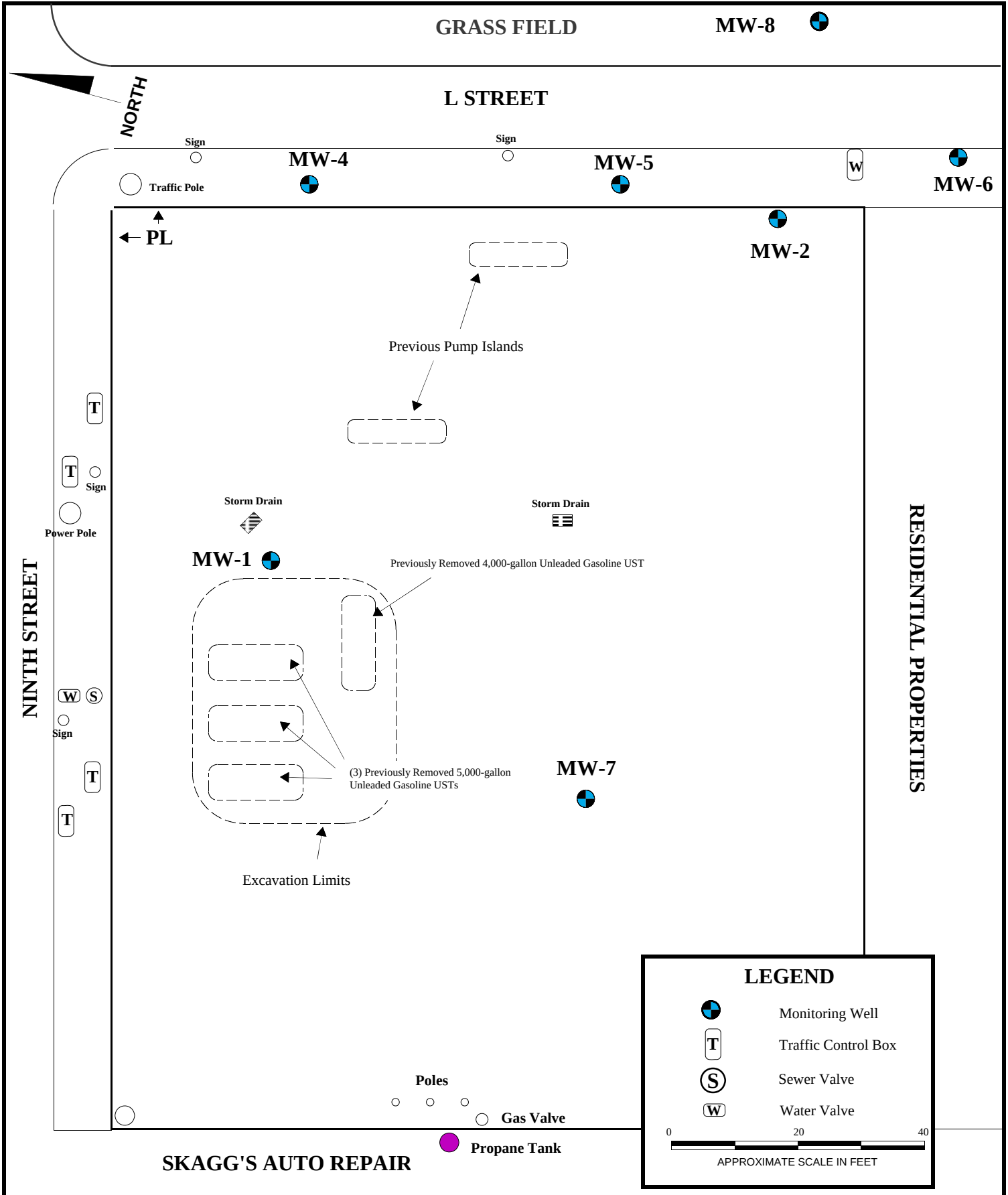


SounPacific Environmental Services
(707) 269-0884

AERIAL/TOPO MAP

Crescent Shell
890 L Street
Crescent City, California 95531

Project No.	Report Date	Figure
SP-165	4/19/2006	1

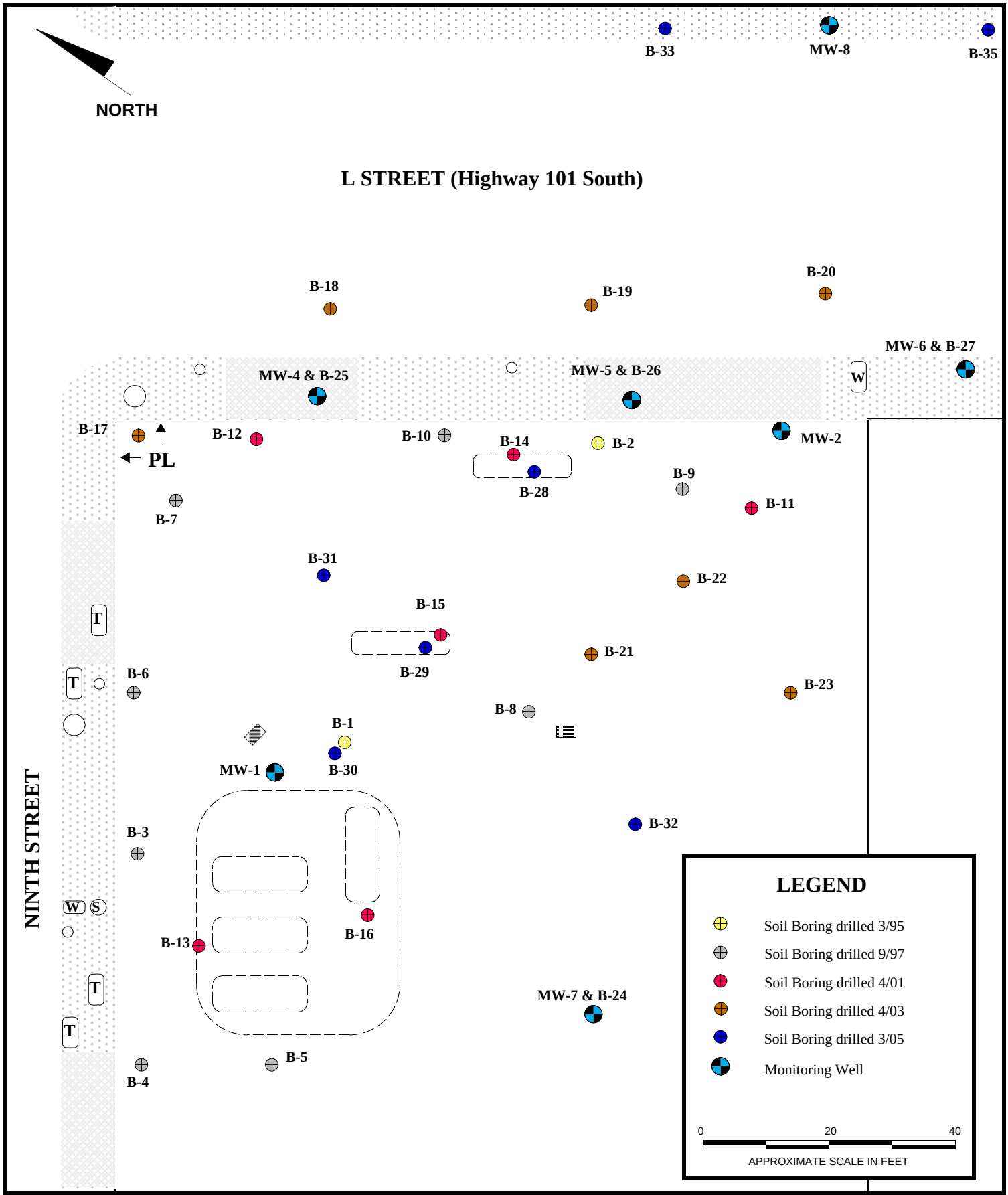


Environmental Services

SITE PLAN

Figure 2

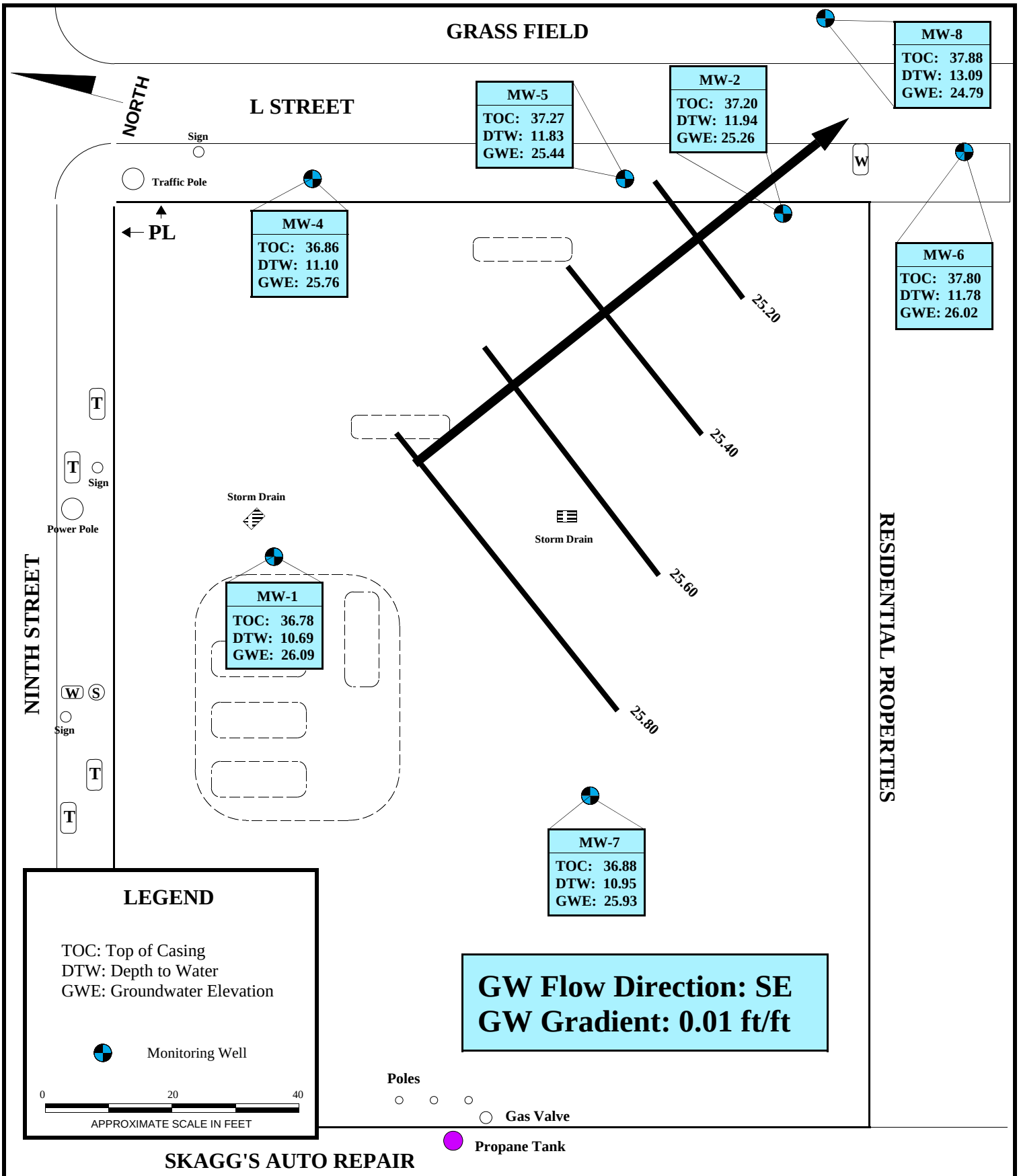
Crescent Shell 890 L Street Crescent City, California 95531	Project No.	Report Date
	SP-165	4/19/2006



Environmental Services

SAMPLE LOCATION MAP

Crescent Shell 890 L Street Crescent City, California 95531	Project No.	Report Date	Figure
	SP-165	4/19/2006	3



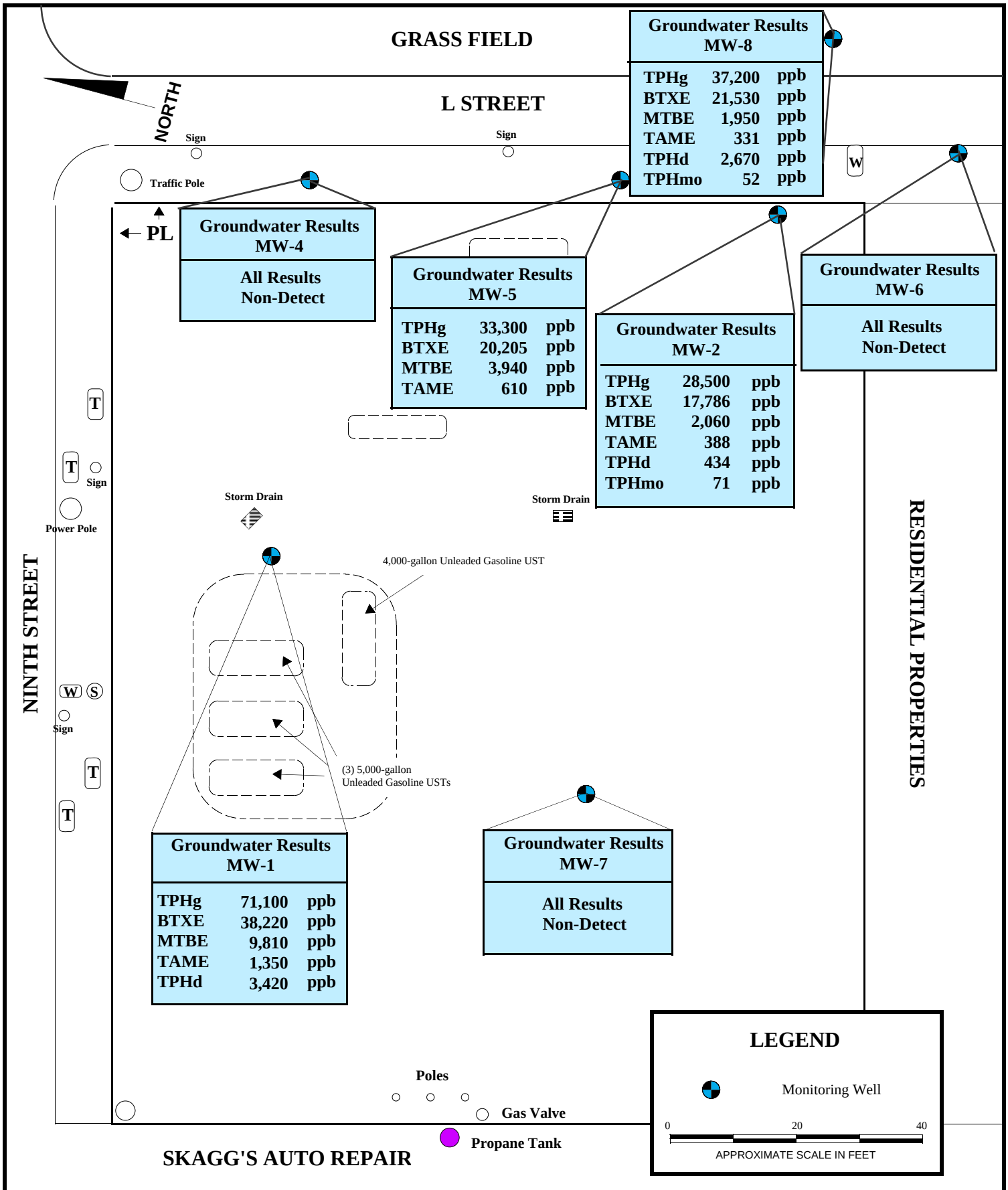
Environmental Services

GROUNDWATER GRADIENT MAP OCTOBER 2005

Crescent Shell
890 L Street
Crescent City, California 95531

Project No.	Report Date
SP-165	4/19/2006

Figure 4

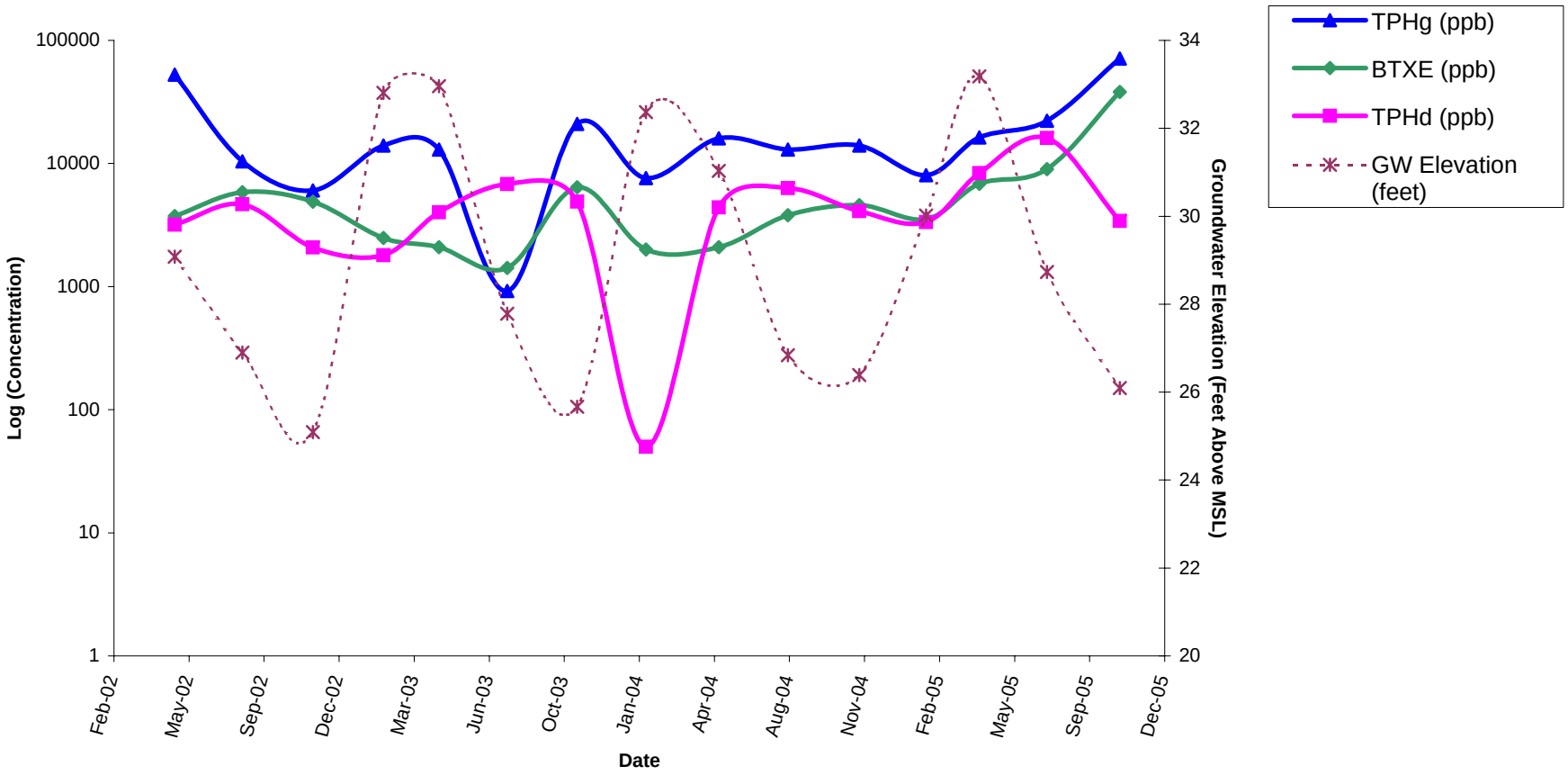


Environmental Services

GROUNDWATER ANALYTICAL RESULTS

Crescent Shell 890 L Street Crescent City, California 95531	Project No.	Report Date	Figure
	SP-165	4/19/2006	5

Figures



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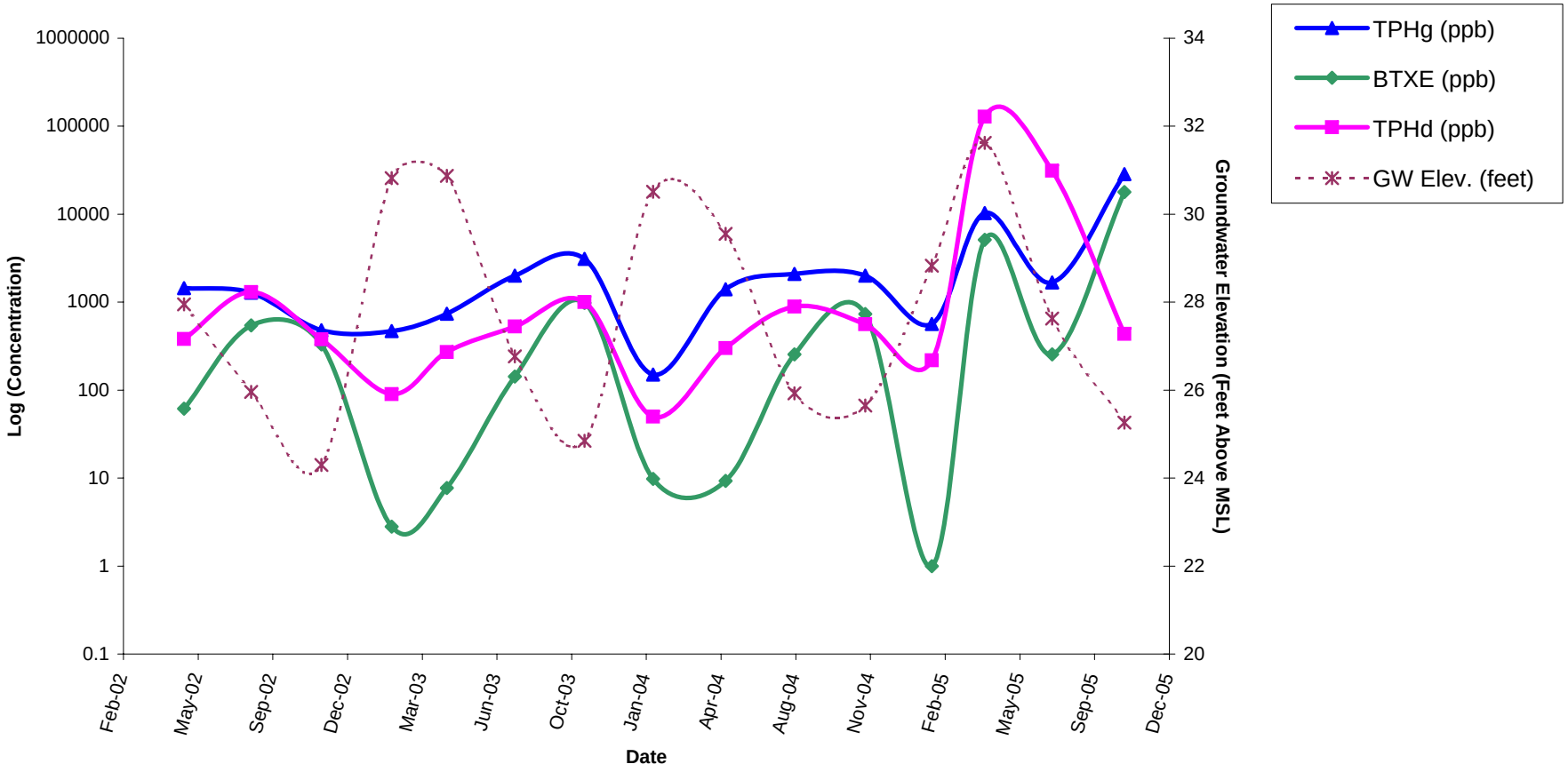
(707) 269-0884

MW-1 HYDROCARBON CONCENTRATIONS VS. TIME

Crescent Shell
890 L Street
Crescent City, California 95531

Project No.	Date
SP-165	4/19/2006

Figure 6



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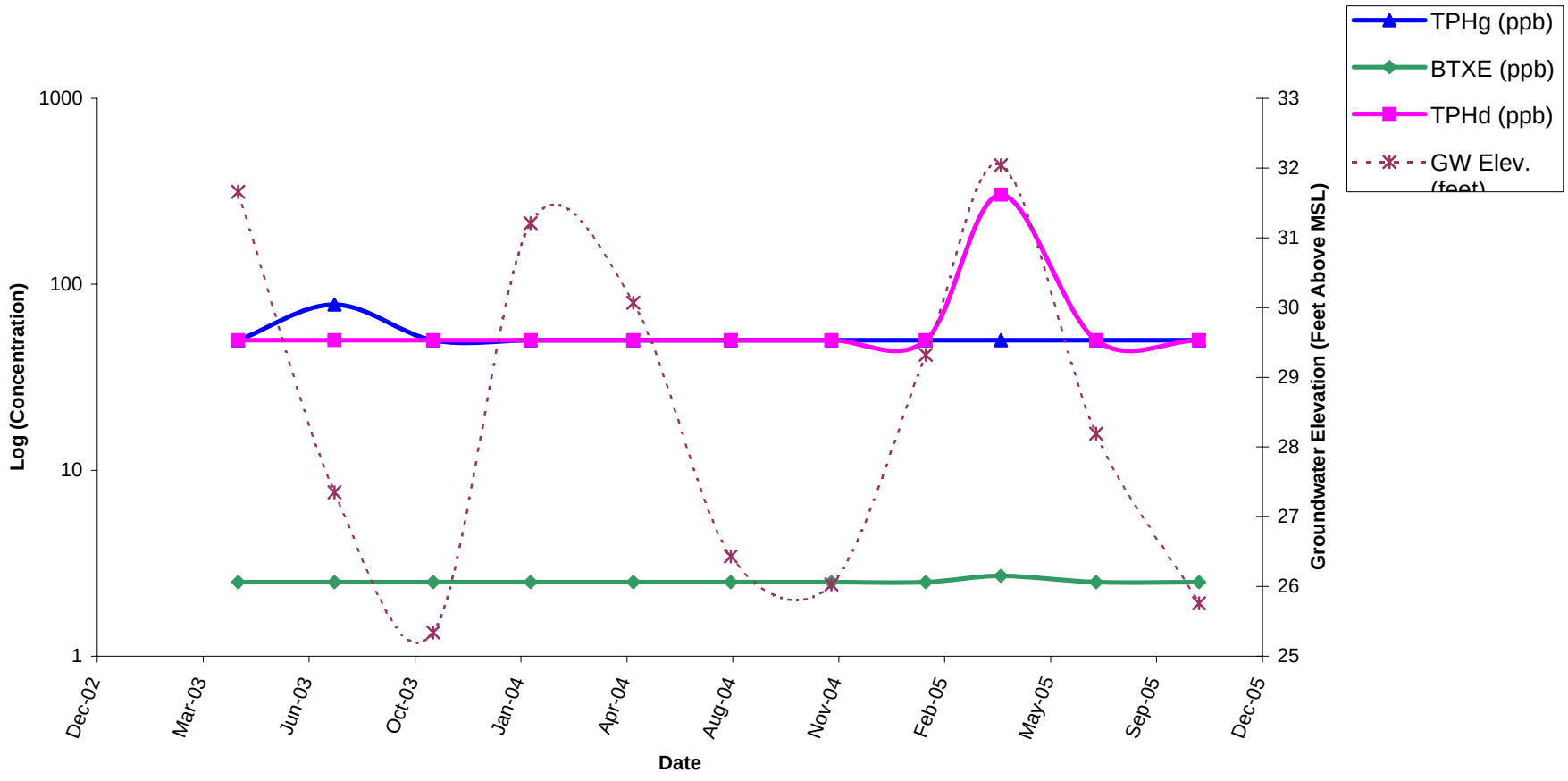
MW-2 HYDROCARBON CONCENTRATIONS VS. TIME			Figure
Crescent Shell 890 L Street Crescent City, California 95531	Project No. SP-165	Date 4/19/2006	7



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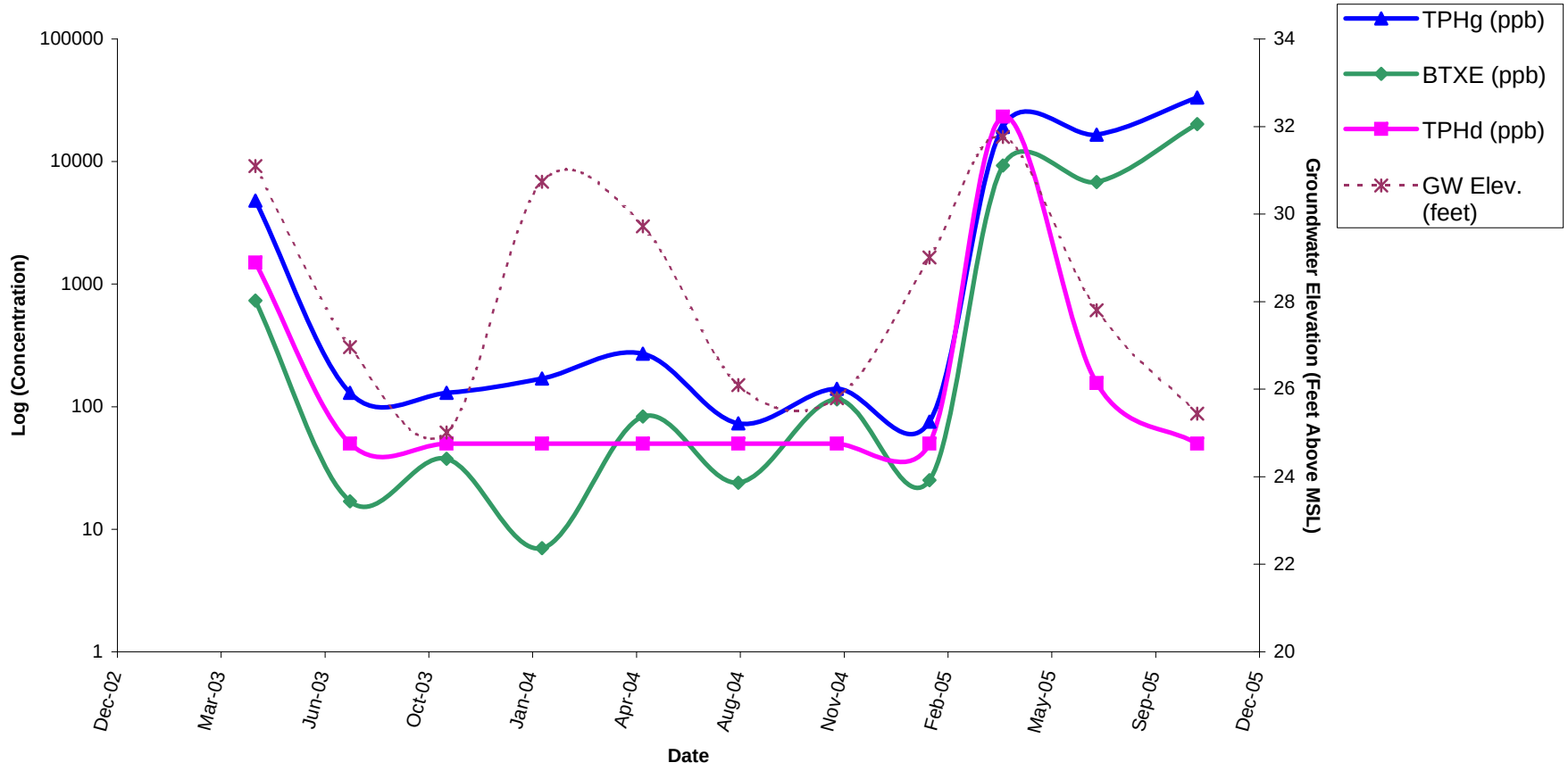
MW-4 HYDROCARBON CONCENTRATIONS VS. TIME			Figure
Crescent Shell 890 L Street Crescent City, California 95531	Project No. SP-165	Date 4/19/2006	8



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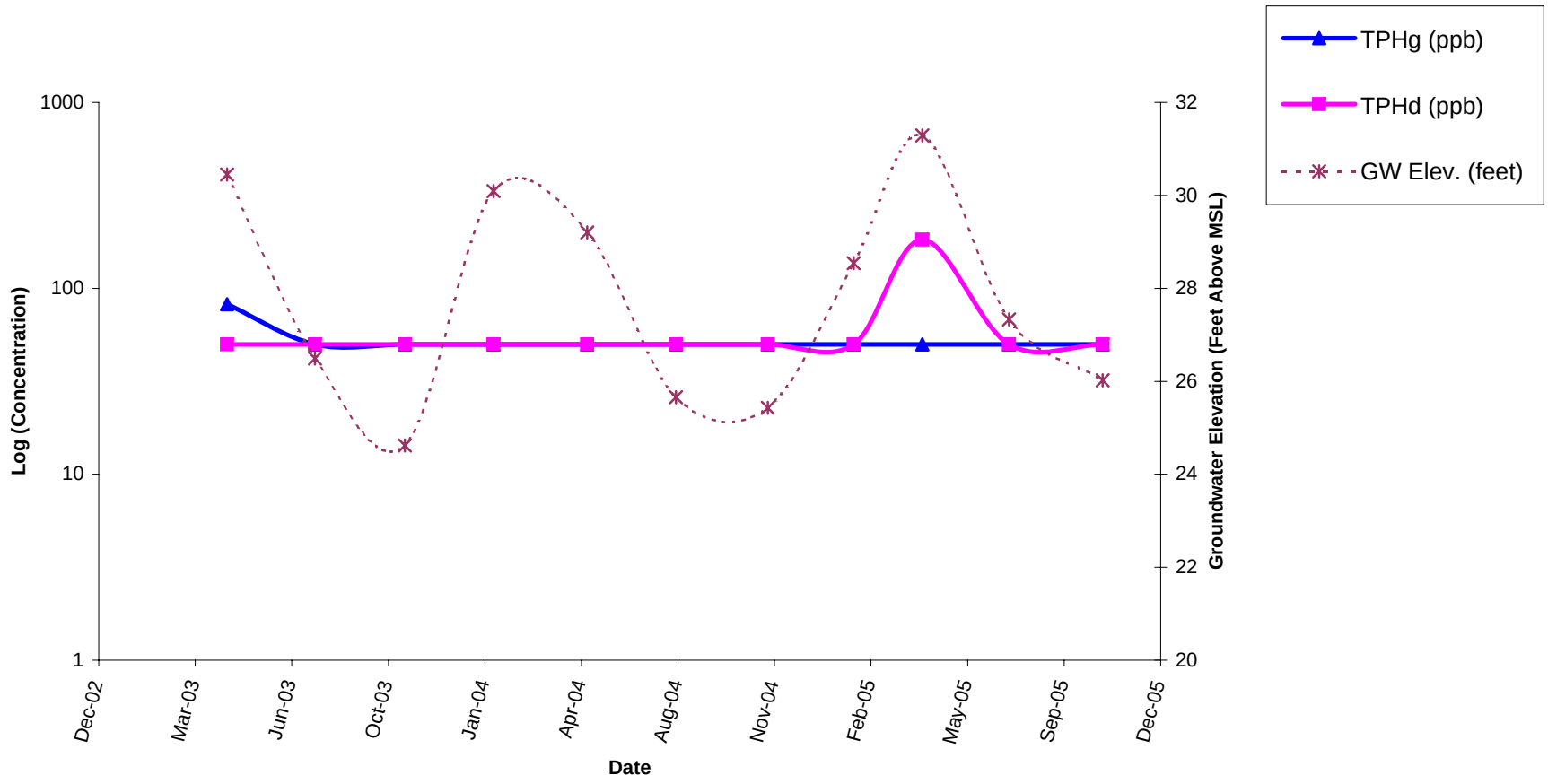
MW-5 HYDROCARBON CONCENTRATIONS VS. TIME

Crescent Shell
890 L Street
Crescent City, California 95531

Project No.	Date
SP-165	4/19/2006

Figure 9



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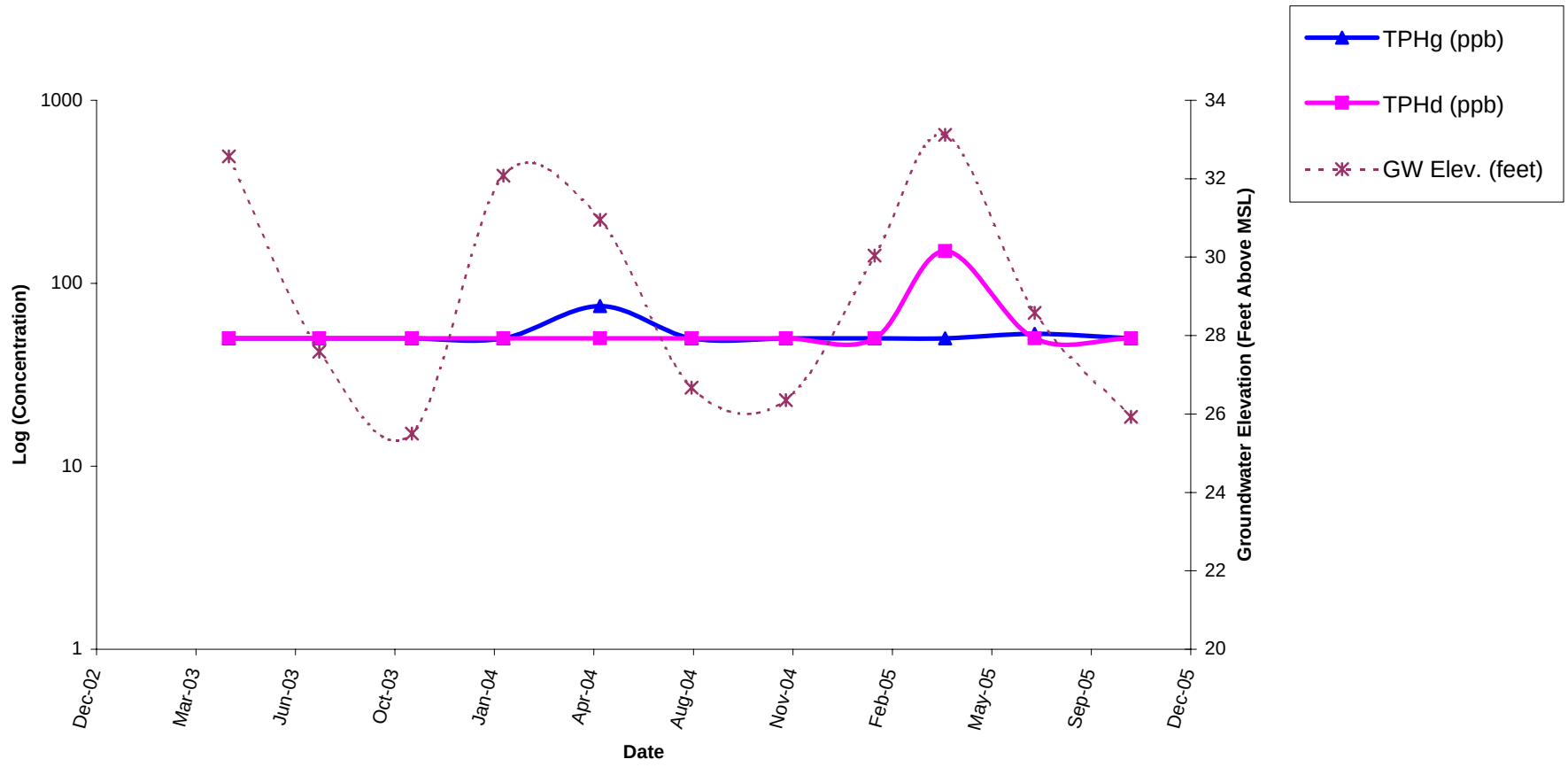
MW-6 HYDROCARBON CONCENTRATIONS VS. TIME

Crescent Shell
890 L Street
Crescent City, California 95531

Project No.	Date
SP-165	4/19/2006

Figure 10



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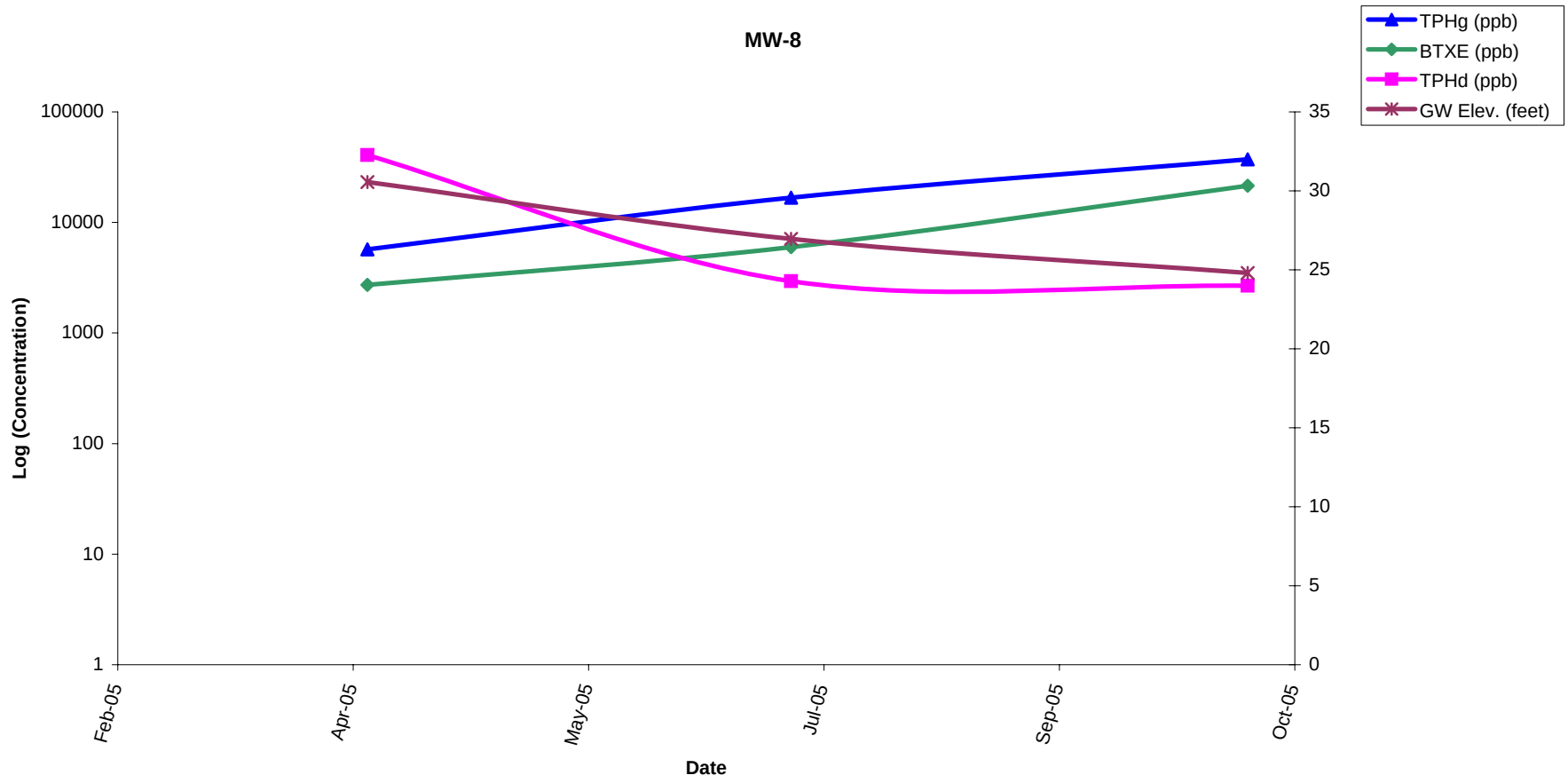
MW-7 HYDROCARBON CONCENTRATIONS VS. TIME

Crescent Shell
890 L Street
Crescent City, California 95531

Project No.	Date
SP-165	4/19/2006

Figure 11



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MW-8 HYDROCARBON CONCENTRATIONS VS. TIME			Figure
Crescent Shell 890 L Street Crescent City, California 95531	Project No.	Date	12
	SP-165	4/16/2006	

Appendices

Appendix A

basic laboratory

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voice 530.243.7234 2218 Railroad Avenue
fax 530.243.7494 Redding, California 96001

November 02, 2005

Lab ID: 5100633

Tien-yu Tai
SOUNPACIFIC
4612 GREENWOOD HEIGHTS DR
KNEELAND, CA 95549
RE: CRESCENT SHELL SP-165

Dear Tien-yu Tai,

Enclosed are the analysis results for Work Order number 5100633. All analysis were performed under strict adherence to our established Quality Assurance Plan. Any abnormalities are listed in the qualifier section of this report.

If you have any questions regarding these results, please feel free to contact us at any time. We appreciate the opportunity to service your environmental testing needs.

Sincerely,

Ricky Jensen
For

Ricky Jensen
Ricky D. Jensen
Laboratory Director
California ELAP Certification Number 1677

basic laboratory

www.basiclab.com

voice 530.243.7234 2218 Railroad Avenue
fax 530.243.7494 Redding, California 96001

Report To: SOUNPACIFIC
4612 GREENWOOD HEIGHTS DR
KNEELAND, CA 95549
Attention: Tien-yu Tai
Project: CRESCENT SHELL SP-165

Lab No: 5100633
Reported: 11/02/05
Phone: 707-269-0884
P.O. #

Volatile Organic Compounds

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
MW-1 Water (5100633-01) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Gasoline	ug/l	**71100**	R-07		12500	EPA 8015/8260	10/19/05	10/19/05	B5J0411
Benzene	"	**1840**	R-07		125	"	"	"	"
Toluene	"	**20400**	R-07		125	"	"	"	"
Ethylbenzene	"	**4180**	R-07		125	"	"	"	"
Xylenes (total)	"	**11800**	R-07		250	"	"	"	"
Methyl tert-butyl ether	"	**9810**	R-07		250	"	"	"	"
Di-isopropyl ether	"	ND	R-07		10.0	"	10/19/05	"	"
Tert-amyl methyl ether	"	**1350**	R-07		125	"	10/19/05	"	"
Ethyl tert-butyl ether	"	ND	R-07		10.0	"	10/19/05	"	"
Tert-butyl alcohol	"	ND	R-07		1000	"	"	"	"
Surrogate: 4-Bromofluorobenzene		*95.2 %*		*43-155*		"	"	"	"
MW-2 Water (5100633-02) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Gasoline	ug/l	**28500**	R-07		10000	EPA 8015/8260	10/19/05	10/19/05	B5J0411
Benzene	"	**516**	R-07		5.0	"	10/19/05	"	"
Toluene	"	**8990**	R-07		100	"	10/19/05	"	"
Ethylbenzene	"	**1220**	R-07		100	"	"	"	"
Xylenes (total)	"	**7060**	R-07		200	"	"	"	"
Methyl tert-butyl ether	"	**2060**	R-07		200	"	"	"	"
Di-isopropyl ether	"	ND	R-07		5.0	"	10/19/05	"	"
Tert-amyl methyl ether	"	**388**	R-07		5.0	"	"	"	"
Ethyl tert-butyl ether	"	ND	R-07		5.0	"	"	"	"
Tert-butyl alcohol	"	ND	R-07		500	"	"	"	"
Surrogate: 4-Bromofluorobenzene		*92.2 %*		*43-155*		"	"	"	"
MW-4 Water (5100633-03) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Gasoline	ug/l	ND			50.0	EPA 8015/8260	10/19/05	10/19/05	B5J0411
Benzene	"	ND			0.5	"	"	"	"
Toluene	"	ND			0.5	"	"	"	"
Ethylbenzene	"	ND			0.5	"	"	"	"
Xylenes (total)	"	ND			1.0	"	"	"	"
Methyl tert-butyl ether	"	ND			1.0	"	"	"	"
Di-isopropyl ether	"	ND			0.5	"	"	"	"
Tert-amyl methyl ether	"	ND			0.5	"	"	"	"
Ethyl tert-butyl ether	"	ND			0.5	"	"	"	"
Tert-butyl alcohol	"	ND			50.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		*86.0 %*		*43-155*		"	"	"	"
MW-5 Water (5100633-04) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Gasoline	ug/l	**33300**	R-07		10000	EPA 8015/8260	10/19/05	10/19/05	B5J0411
Benzene	"	**855**	R-07		10.0	"	10/19/05	"	"
Toluene	"	**11100**	R-07		100	"	10/19/05	"	"
Ethylbenzene	"	**1230**	R-07		10.0	"	10/19/05	"	"
Xylenes (total)	"	**7020**	R-07		200	"	10/19/05	"	"
Methyl tert-butyl ether	"	**3940**	R-07		200	"	"	"	"
Di-isopropyl ether	"	ND	R-07		10.0	"	10/19/05	"	"
Tert-amyl methyl ether	"	**610**	R-07		10.0	"	"	"	"
Ethyl tert-butyl ether	"	ND	R-07		10.0	"	"	"	"
Tert-butyl alcohol	"	ND	R-07		1000	"	"	"	"
Surrogate: 4-Bromofluorobenzene		*88.6 %*		*43-155*		"	"	"	"
MW-6 Water (5100633-05) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Gasoline	ug/l	ND			50.0	EPA 8015/8260	10/19/05	10/19/05	B5J0411
Benzene	"	ND			0.5	"	"	"	"
Toluene	"	ND			0.5	"	"	"	"

Approved By

Basic Laboratory, Inc.
California D.O.H.S. Cert #1677

basic laboratory
www.basiclab.com
voice 530.243.7234 2218 Railroad Avenue
fax 530.243.7494 Redding, California 96001

Report To: SOUNPACIFIC
4612 GREENWOOD HEIGHTS DR
KNEELAND, CA 95549
Attention: Tien-yu Tai
Project: CRESCENT SHELL SP-165

Lab No: 5100633
Reported: 11/02/05
Phone: 707-269-0884
P.O. #

Volatile Organic Compounds

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
MW-6 Water (5100633-05) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Ethylbenzene	"	ND			0.5	"	"	10/19/05	"
Xylenes (total)	"	ND			1.0	"	"	"	"
Methyl tert-butyl ether	"	ND			1.0	"	"	"	"
Di-isopropyl ether	"	ND			0.5	"	"	"	"
Tert-amyl methyl ether	"	ND			0.5	"	"	"	"
Ethyl tert-butyl ether	"	ND			0.5	"	"	"	"
Tert-butyl alcohol	"	ND			50.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		*89.8 %*		*43-155*		"	"	"	"
MW-7 Water (5100633-06) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Gasoline	ug/l	ND			50.0	EPA 8015/8260	10/19/05	10/19/05	B5J0411
Benzene	"	ND			0.5	"	"	"	"
Toluene	"	ND			0.5	"	"	"	"
Ethylbenzene	"	ND			0.5	"	"	"	"
Xylenes (total)	"	ND			1.0	"	"	"	"
Methyl tert-butyl ether	"	ND			1.0	"	"	"	"
Di-isopropyl ether	"	ND			0.5	"	"	"	"
Tert-amyl methyl ether	"	ND			0.5	"	"	"	"
Ethyl tert-butyl ether	"	ND			0.5	"	"	"	"
Tert-butyl alcohol	"	ND			50.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		*87.0 %*		*43-155*		"	"	"	"
MW-8 Water (5100633-07) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Gasoline	ug/l	**37200**	R-07		10000	EPA 8015/8260	10/19/05	10/19/05	B5J0411
Benzene	"	**2920**	R-07		100	"	"	"	"
Toluene	"	**8110**	R-07		100	"	"	"	"
Ethylbenzene	"	**3160**	R-07		100	"	"	"	"
Xylenes (total)	"	**7340**	R-07		200	"	"	"	"
Methyl tert-butyl ether	"	**1950**	R-07		200	"	"	"	"
Di-isopropyl ether	"	ND	R-07		10.0	"	10/19/05	"	"
Tert-amyl methyl ether	"	**331**	R-07		10.0	"	"	"	"
Ethyl tert-butyl ether	"	ND	R-07		10.0	"	"	"	"
Tert-butyl alcohol	"	ND	R-07		1000	"	"	"	"
Surrogate: 4-Bromofluorobenzene		*88.6 %*		*43-155*		"	"	"	"

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fax 530.243.7494 Redding, California 96001

Report To: SOUNPACIFIC
4612 GREENWOOD HEIGHTS DR
KNEELAND, CA 95549
Attention: Tien-yu Tai
Project: CRESCENT SHELL SP-165

Lab No: 5100633
Reported: 11/02/05
Phone: 707-269-0884
P.O. #

TPH Diesel & Motor Oil

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
MW-1 Water (5100633-01) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Diesel	ug/l	**3420**	D-08, QR-02		50	EPA 8015 MOD	10/27/05	10/20/05	B5J0431
Motor Oil	"	ND	QR-02		50	"	"	"	"
Surrogate: Octacosane		*111 %*		*50-150*		"	"	"	"
MW-2 Water (5100633-02) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Diesel	ug/l	**434**	D-08, QR-02		50	EPA 8015 MOD	10/28/05	10/20/05	B5J0431
Motor Oil	"	**71**	D-03, QR-02		50	"	"	"	"
Surrogate: Octacosane		*110 %*		*50-150*		"	"	"	"
MW-4 Water (5100633-03) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Diesel	ug/l	ND	QR-02		50	EPA 8015 MOD	10/28/05	10/20/05	B5J0431
Motor Oil	"	ND	QR-02		50	"	"	"	"
Surrogate: Octacosane		*103 %*		*50-150*		"	"	"	"
MW-5 Water (5100633-04) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Diesel	ug/l	ND	QR-02		50	EPA 8015 MOD	10/28/05	10/20/05	B5J0431
Motor Oil	"	ND	QR-02		50	"	"	"	"
Surrogate: Octacosane		*97.3 %*		*50-150*		"	"	"	"
MW-6 Water (5100633-05) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Diesel	ug/l	ND	QR-02		50	EPA 8015 MOD	10/28/05	10/20/05	B5J0431
Motor Oil	"	ND	QR-02		50	"	"	"	"
Surrogate: Octacosane		*100 %*		*50-150*		"	"	"	"
MW-7 Water (5100633-06) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Diesel	ug/l	ND	QR-02		50	EPA 8015 MOD	10/28/05	10/20/05	B5J0431
Motor Oil	"	ND	QR-02		50	"	"	"	"
Surrogate: Octacosane		*100 %*		*50-150*		"	"	"	"
MW-8 Water (5100633-07) Sampled:10/15/05 00:00 Received:10/19/05 12:29									
Diesel	ug/l	**2670**	D-08, QR-02		50	EPA 8015 MOD	10/28/05	10/20/05	B5J0431
Motor Oil	"	**52**	D-03, QR-02		50	"	"	"	"
Surrogate: Octacosane		*102 %*		*50-150*		"	"	"	"

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fax 530.243.7494 Redding, California 96001

Report To: SOUNPACIFIC
4612 GREENWOOD HEIGHTS DR
KNEELAND, CA 95549
Attention: Tien-yu Tai
Project: CRESCENT SHELL SP-165

Lab No: 5100633
Reported: 11/02/05
Phone: 707-269-0884
P.O. #

Notes and Definitions

R-07	The sample was diluted due to the presence of high levels of target analytes resulting in elevated reporting limits.
QR-02	The RPD result for the MS/MSD exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
D-08	Results in the diesel organics range are primarily due to overlap from a gasoline range product.
D-03	The result for this hydrocarbon is elevated due to the presence of single analyte peak(s) in the quantitation range.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
<	Less than reporting limit
≤	Less than or equal to reporting limit
>	Greater than reporting limit
≥	Greater than or equal to reporting limit
MDL	Method Detection Limit
RL/ML	Minimum Level of Quantitation
MCL/AL	Maxium Contaminant Level/Action Level
mg/kg	Results reported as wet weight
TTLC	Total Threshold Limit Concentration
STLC	Soluble Threshold Limit Concentration
TCLP	Toxicity Characteristic Leachate Procedure

Approved By
Basic Laboratory, Inc.
California D.O.H.S. Cert #1677

BASIC LABORATORY CHAIN OF CUSTODY RECORD

2218 Railroad Ave., Redding, CA 96001 (530) 243-7234 FAX (530) 243-7494

el

LAB #: 5100633

CLIENT NAME: SounPacific	PROJECT NAME: Crescent Shell	PROJECT #: SP-165	SAMPLE TYPE: W
ADDRESS: P.O. Box 13, Kneeland, CA 95549	REQUESTED COMP. DATE: Standard 11/2/05	STATE FORMS? ☐	# OF SAMPLES: 7
	TURN AROUND TIME: STD ☒ RUSH ☐		PAGE 1 OF 1
PROJECT MANAGER: Tien-yu Tai			REP:
PHONE: 707-269-0884	FAX: 707-269-0699	E-MAIL: tien@soumpacific.com	ID#:
INVOICE TO: SounPacific		PO#: & andy@soumpacific.com	SYSTEM#:
SPECIAL MAIL ☐ E-MAIL ☒ FAX ☐ EDT ☐			GLOBAL ID #: T0601500049
			QC = 1 2 3 4

DATE	TIME	WATER	COMP	SOIL	SAMPLE DESCRIPTION	# OF BOTTLES	TPHg (EPA 8260b)	BTEX (EPA 8260b)	5 Oxys (EPA 8260b)	TPHd (EPA 8015)	TPHmo (EPA 8015)	LAB ID	REMARKS
					14th Quarterly Monitoring Sampling								
10-15-05		X			MW-1	5	X	X	X	X	X	1	
					MW-2							2	
					MW-4							3	
					MW-5							4	
					MW-6							5	
					MW-7							6	
					MW-8							7	

PRESERVED WITH: HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ ZnAce/NaOH ☐ HCL ☒ (in VOAs) NaThio ☐ OTHER_____

SAMPLED BY: Tien-yu Tai	DATE/TIME: 10-15-05	RELINQUISHED BY: [signature]	DATE/TIME: 10/17/05
RECEIVED BY:	DATE/TIME:	RELINQUISHED BY:	DATE/TIME:
RECEIVED BY: (SAMPLES UNVERIFIED)	DATE/TIME:	RELINQUISHED BY:	DATE/TIME:
RECEIVED BY LAB: (VERIFIED) [signature]	DATE/TIME: 10/19/05 12:29	SAMPLES SHIPPED VIA: UPS FEDEX POST BUS OTHER_____	

INSTRUCTIONS, TERMS AND CONDITIONS ON BACK.

Appendix B

SounPacific
Environmental Services
(707) 269-0884

Standard Operating Procedures

Groundwater Level Measurements and Free Phase Hydrocarbon Measurements

All SounPacific staff and contractors shall adopt the following procedures any time that groundwater elevations are determined for the purposes of establishing groundwater gradient and direction, and prior to any sampling event.

Wells are to be tested for free phase hydrocarbons (free product) before the first development or sampling of any new well, and in any well that has historically contained free product.

Equipment Checklist

- ❑ Combination water level / free phase hydrocarbon indicator probe (probe)
- ❑ Gauging Data / Purge Calculations Sheet
- ❑ Pencil or Pen/sharpie
- ❑ Disposable Gloves
- ❑ Distilled Water and or know water source on site that is clean
- ❑ Alconox (powder) or Liquinox (liquid) non-phosphate cleaners—do not use soap!
- ❑ Buckets or Tubs for decontamination station
- ❑ Tools necessary to access wells
- ❑ Site Safety Plan
- ❑ This Standard Operating Procedure
- ❑ Notify Job site business that you will be arriving to conduct work.

Procedure

1. Review Site Safety Plan and utilize personal protection appropriate for the contaminants that may be encountered.

2. Access and open all monitoring wells to be measured. Allow wells to equilibrate for approximately 15 minutes before taking any measurements.

3. Decontaminate probe with Alconox or Liquinox solution, and rinse with distilled water.

4. Determine the diameter of the well to be measured and indicate this on the Gauging Data / Purge Calculations Sheet.

5. Words of caution: Please be careful with water level and product meters probes are not attached with high strength material so please make sure to avoid catching the end on anything in the well and make sure not to wind reel to the point that it could pull on the probe. ***If product is suspect in a well, go to step 6, if no product is suspected go to step 7 below.***

6. **When product is present or suspected:** use the product level meter. Clip the static charge clamp to the side of the well casing. Then lower probe into the well through the product/water interface about one foot if possible. Then slowly raise the probe back up through the product/water interface layer and record the level as the tone changes from solid to broken-record this level in the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTP). Continue to raise the probe up through the product until the tone stops completely-record this level on the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTW). Then go to step 8.

7. **When no product is present or suspected:** If no free product is present, record the depth of the water (to the nearest 0.01 foot) relative to the painted black mark on the top of the well casing. Leave the probe in the well just a hair above the water level to ensure the well as equilibrated. As the well rises, the tone will sound. Make sure no increase in water levels have occurred in over a ten-minute period. Water levels can lower as well as rise. Make sure you note when the level you keep lowering the probe to has remained stable for at least ten minutes. Once this has been accomplished, please record this level in the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTW).

8. Turn off the probe, and use the probe to determine the depth to the bottom of the well relative to the top of the well casing. This is the depth to bottom measurement (DTB).

9. Decontaminate probe and tape by washing in an Alconox/Liquinox solution ***(read directions on solution for ratio of water to cleanser)*** and use the toothbrush provided to remove any foreign substance from the probe and tape. Then triple rinse probe and tape with clean water and then proceed to take measurements in the next well.

10. If sampling is to occur, proceed to implement SounPacific's Standard Operating Procedure for Monitoring Well Purging and Sampling. If no sampling is to be performed, close and secure all wells and caps.

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Standard Operating Procedures

Monitoring Well Purging and Groundwater Sampling

All SounPacific employees and contractors shall adopt the following procedures any time that groundwater samples are to be taken from an existing groundwater monitoring well.

Prior to the implementation of these procedures, the groundwater level **MUST** be measured and the presence of free phase hydrocarbons determined in accordance with SounPacific's Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements.

Equipment Checklist

- ❑ **Gauging Data / Purge Calculations Sheet used for water level determination**
- ❑ Chain of Custody Form
- ❑ pH/ Conductivity / Temperature meter
- ❑ Pencil or Pen
- ❑ Indelible Marker
- ❑ Calculator
- ❑ Disposable Gloves
- ❑ Distilled Water
- ❑ Alconox/liquinox liquid or powdered non-phosphate cleaner
- ❑ Buckets or Tubs for decontamination station
- ❑ Bottom-filling bailer or pumping device for purging
- ❑ Disposable bottom-filling bailer and emptying device for sampling
- ❑ String, twine or fishing line for bailers
- ❑ Sample containers appropriate for intended analytical method (check with lab)
- ❑ Sample labels
- ❑ Site Safety Plan
- ❑ Tools necessary to access wells
- ❑ Drum space on site adequate for sampling event

Procedure

1. Review Site Safety Plan and utilize personal protection appropriate for the contaminants that may be encountered.

2. Measure groundwater levels and check for the presence of free product in accordance with the Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements.

Purging

3. Calculate and record the volume of standing water in each well using the information provided on the Gauging Data / Purge Calculations sheet.
   (DTB-DTW) x Conversion Factor = Casing Volume.

4. The purge volume shall be at least three times and no more than seven times the volume of standing water (the casing volume).

5. Purge the well by bailing or pumping water from the well into a calibrated receptacle, such as a five gallon bucket or tub with markings to indicate one gallon increments. Collect purgeate in a 55 gallon labeled drum and store on site. Drum labels should include the date, contents, site number, and SounPacific's name and telephone number.

6. Take measurements of pH, conductivity, temperature, and visual observations to verify the stabilization of these parameters. At least five measurements of these parameters should be made throughout the purging process. The parameters shall be considered stabilized if successive measurements vary by less than 0.25 pH units, 10% of conductivity in μS, and 1°C (or 1.8°F). Continue purging until at least three times the casing volume has been removed, and the measured parameters have stabilized as indicated above. Do not exceed seven casing volumes.

7. Take a final depth to groundwater measurement and calculate the casing volume of the recharged well. Ideally, the casing volume should have recharged to at least 80% of the original measured casing volume before sampling commences. If due to slow recharge rates it is not feasible to wait for the well to fully recharge, then note this on the Gauging Data / Purge Calculation Sheet and proceed to sample following the procedure below.

Sampling

8. **After completing groundwater measurement, and checking for free product if necessary, in accordance with SounPacific's Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements, and after purging monitoring wells as described above, groundwater samples may be collected.**

9. Slowly lower a clean, previously unused disposable bailer into the well water approximately half of the bailer length, and allow the bailer to slowly fill.

10. Withdraw the full bailer from the monitoring well and utilize the included (clean and unused) bottom-emptying device to fill the necessary sample containers, and seal the container with the included PTFE (Teflon) lined cap.

11. When filling VOAs, fill the VOA completely full, with the meniscus rising above the rim of the bottle. Carefully cap the VOA and invert it and gently tap it to determine whether air bubbles are trapped inside. If the VOA contains air bubbles, refill the VOA and repeat this step.

12. All samples shall be labeled with the Sample ID, the Sample Date, and the Sample Location or Project Number. Use an indelible marker for writing on sample labels.

13. Record all pertinent sample data on the Chain of Custody.

14. Place samples in an ice chest cooled to 4°C with ice or "blue ice". Bottles should be wrapped in bubble wrap, and VOA's should be inserted in a foam VOA holder to protect against breakage. Samples are to be kept at 4°C until delivered to the laboratory. Any transference of sample custody shall be indicated on the Chain of Custody with the appropriate signatures as necessary.

15. Utilize clean, previously unused gloves, bailer and line, and bottom-emptying device for each well sampled.

16. When finished with all sampling, close and secure all monitoring wells.

17. Leave the site cleaner than when you arrived and drive safely.

Appendix C

GAUGING DATA/PURGE CALCULATIONS

Job Site: Crescent Shell Job No.: SP-165

Event: 14 Quarterly Monitoring Sampling Date: 10-15-05

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WELL NO	DIA. (in.)	DTB (ft.)	DTW (ft.)	ST (ft.)	CV (gal.)	PV (gal.)	SPL (ft.)	Bailer Loads	Notes
MW-1	2	13.70	10.69	3.01	0.5	1.5			Clearer, very shallow
MW-2	2	13.45	11.94	1.51	0.25	0.75			Clearer, very shallow
MW-4	2	18.95	11.1	7.85	1.25	3.75			With Sand/Silt
MW-5	2	18.86	11.83	7.03	1.15	3.45			" "
MW-6	2	18.65	11.78	6.87	1.1	3.3			" "
MW-7	2	18.42	10.95	7.47	1.2	3.6			" "
MW-8	2	14.2	13.09	1.01	0.2	0.6			Clearer (Some air), very shallow

Explanation:
DIA. = Well Diameter
DTB = Depth to Bottom
DTW = Depth to Water
ST = Saturated Thickness (DTB-DTW)
CV = Casing Volume (ST x cf)
PV = Purge Volume (standard 3 x CV, well development 10 x CV)
SPL = Thickness of Separate Phase Liquid

Conversion Factors (cf):
2 in. dia. well cf = 0.16 gal./ft.
4 in. dia. well cf = 0.65 gal./ft.
6 in. dia. well cf = 1.44 gal./ft.

Sampler: Tien-yu Tai

FILE

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Well Gauging/Sampling Report

Date: 10-15-05 Project Name: Crescent Shell Project No: SP165 Well Number: MW-1

Analyses Tested: TPHg, BTEX, 5-Oxys, TPHd, TPHmo

Sample Containers: 3 Hcl VOA (40 mls), 2 Amber Glass Bottles (1L)

Purge Technique: ☐ Bailer ☒ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes:
1:34 pm	10.70 ft		Sheen
1:57	10.69		Sheen
End			

Field Measurements

Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)	
5:11pm	0	7.22	64.34	0.557	0.73	7.7	
5:14pm	0.5	7.22	65.18	0.508	0.80	8.6	
5:20pm	1	7.24	65.36	0.493	1.05	11.3	
5:23pm	1.5	7.23	65.34	0.493	0.95	9.9	

Field Scientist: Tien-yu Tai

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Well Gauging/Sampling Report

Date: 10-15-05 Project Name: Crescent Shell Project No: SP-165 Well Number: MW-2

Analyses Tested: TPHg, BTEX, 5 Oxys, TPHd, TPHmo

Sample Containers: 3 HCl VOA (40ml), 2 Amber Glass Bottles (1-L

Purge Technique: ☐ Bailer ☒ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes:
1:43 pm	11.94 ft		No Sheen
2:11 pm	11.94		No. Sheen

Field Measurements

Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(mg/cm)	DO/(mg/L)	DO/(%)	
5:35p	0	7.14	64.21	0.468	0.86	9.1	
5:41	0.25	7.14	64.98	0.486	2.86	30.5	
5:46	0.5	7.11	65.35	0.495	2.92	31.3	
5:49	0.75	7.14	65.22	0.495	2.88	30.8	

Field Scientist: Tien-yu Tai

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Well Gauging/Sampling Report

Date: 10-15-05 Project Name: Crescent Shell Project No: SP-165 Well Number: MW-4

Analyses Tested: TPHg, BTEX, 5-Oxys, TPHd, TPHmo

Sample Containers: 3 HCl VOAs (40 ml), 2 Amber Glass Bottles (1-L)

Purge Technique: ☐ Bailer ☒ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes:
1:37 pm	11.1 ft		Sheen
2:01 p	11.1		Sheen

Field Measurements

Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)	
4:21 pm	0	7.42	63.13	0.172	6.07	63.2	
4:28	1.25	7.20	63.58	0.172	6.08	63.7	
4:32	2.5	7.18	63.47	0.173	5.91	61.8	
4:46	3.75	7.35	63.12	0.177	6.90	71.0	

Field Scientist: Tien-yu Tai

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Well Gauging/Sampling Report

Date: 10-15-05 Project Name: Crescent Shell Project No: SP-165 Well Number: MW-5

Analyses Tested: TPHg, BTEX, 5-Oxys, TPHd, TPHmo

Sample Containers: 3 HCl VOAs (40ml), 2 Amber Glass Bottles (1-L)

Purge Technique: ☐ Bailer ☒ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes:
1:40 pm	11.83 ft		No sheen
2:07	11.83		No sheen
End			

Field Measurements

Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)	
3:59 pm	0	7.36	62.43	0.167	6.48	66.9	
4:04	1.15	7.25	62.23	0.165	6.72	69.2	
4:07	2.3	7.15	62.29	0.167	6.36	65.6	
4:09	3.45	6.98	62.65	0.169	5.54	57.4	

Field Scientist: Tien-yu Tai

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Well Gauging/Sampling Report

Date: 10-15-05 Project Name: Crescent Shell Project No: SP165 Well Number: MW-6

Analyses Tested: TPHg, BTEX, 5-Oxys, TPHd, TPHmo

Sample Containers: 3 HCl VOAs (40ml), 2 Amber Glass Bottles (1-L)

Purge Technique: ☐ Bailer ☒ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes:
1:45 pm	11.78 ft		No sheen
2:15pm	11.78		"
End			

Field Measurements

Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)	
3:35pm	0	7.31	60.46	0.165	4.16	42.0	
3:42	1.1	7.10	60.05	0.165	5.44	54.7	
3:44	1.2	7.02	60.01	0.164	5.55	55.8	
3:47	1.3	6.93	59.80	0.170	6.82	68.4	

Field Scientist: Tien-yu Tai

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Well Gauging/Sampling Report

Sheet 6 of 7

Date: 10-15-05 Project Name: Crescent Shell Project No: SP-165 Well Number: MW-7

Analyses Tested: TPHg, BTEX, 5-Oxys, TPHd, TPHmo

Sample Containers: 3 HCl VOA (40ml), 2 Amber Glass Bottles (1L)

Purge Technique: ☐ Bailer ☒ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes:
1:31pm	10.95ft		
1:50pm	10.95		

Field Measurements

Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)	
4:48pm	0	7.37	62.11	0.178	6.79	69.9	
4:53	1.2	7.28	62.41	0.178	6.86	70.8	
4:55	2.4	7.21	62.50	0.178	7.05	72.9	
4:58	3.6	7.13	62.48	0.177	7.09	73.3	

Field Scientist: Tien-yu Tan

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Well Gauging/Sampling Report

Date: 10-15-05 Project Name: Crescent Shell Project No: SP165 Well Number: MW-8

Analyses Tested: TPHg, BTEX, 5-Oxys, TPHd, TPHmo

Sample Containers: 3 HCl VOA (40 ml) . 2 Amber Glass Bottles (1-L)

Purge Technique: ☐ Bailer ☒ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes:
1:45 pm	13.1 ft		No Sheen
2:21	13.09		"
End			

Field Measurements

Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)	
3:03pm	0	7.14	63.60	0.575	5.93	62.2	
3:09	0.2	7.13	63.56	0.542	5.59	58.5	
3:12	0.4	7.16	63.91	0.536	5.93	62.4	
3:15	0.6	7.16	63.94	0.535	6.43	67.6	

Field Scientist: Tien-yu Tai