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SALTBUSH ENVIRONENTAL SERVICES INC.
MEMORANDUM

TO: **Paul McBeth**
PNG Environmental
7130 Southwest Elmhurst Street
Tigard, Oregon 97223

FROM: **John Hildenbrand**

The attached report and remedial action cost estimate for the Metroplex Cardlock facility located at 3200 20th Street East, Fife Washington is being sent to you as requested by Ms. Beth Muhler of Investors Underwriting. Both our Client and the purchaser of the site are anxious to begin remedial efforts.

If you have any questions, please contact me at (253) 383-1914, or via email to jfh@saltbush.com. I can also be reached by facsimile at (253) 383-4525 and vial cellular telephone at (253) 377-7021.

Remedial Investigation

Fife Cardlock Fuel Facility Project
The 3200 20th Street East,
Fife, Washington 98424
Project No. 020921477
November 4, 2002

Prepared for:

Grenley Stewart Resources, Inc.
Mr. Rob Grenley & Mr. Greg Stewart
1019 Pacific Avenue
Tacoma, Washington 98401

The on-site dates for this project were October 7, 8 and 9, 2002.

Questions regarding this report, the presentation of the information, and the interpretation of the data are welcome and should be referred to the Project Manager.

Franz A. Carmine, Project Manager

John F. Hildenbrand, Sr. Environmental Scientist

Dennis E. Salt, Principal

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REPORT DISTRIBUTION

1 Copy	Grenley Stewart Resources, Inc.
1 Copy	Mr. Hank Seipt, Bristol Environmental, Inc.
1 Copy	Ms. Beth Muhler, Investors Underwriting
1 Copy	Saltbush Environmental Services, Inc. (Project Reference # 020921477)

November 4, 2002

Grenley Stewart Resources, Inc.
Mr. Rob Grenley, Mr. Greg Stewart
1019 Pacific Avenue, Suite 1315
Tacoma, Washington 98401

Re: The Fife Cardlock Fuel Facility Project
3200 20th Street East, Fife, Washington
Saltbush Project Number: 020921777

Dear Mr. Grenley and Mr. Stewart:

We are pleased to enclose the Limited Phase II Environmental Site Assessment conducted for the noted property.

The contents of this report are confidential and for the purposes of this transaction only. We are distributing one original copy of the report to you, one copy to Mr. Hank Seipt, Bristol Environmental and one copy to Ms. Beth Muhler, Investors Underwriting at this time. No other distribution will take place without your written approval to do so. A fee will be assessed for additional copies.

It has been a pleasure to be of service. If you have any comments or questions regarding this report or any continuation of project activities, please call us at (253) 383-1914. We will be pleased to be of assistance in any way that we can. We look forward to working with you on future projects.

Very truly yours,

Saltbush Environmental Services, Inc.

Franz A. Carmine
Project Manager

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QC:
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1477-2 Phase II Transmittal Letter.doc

1.0 INTRODUCTION

1.1 Purpose and Objectives

This report presents the results of review of site activities previously completed by others, including field visits, installation and soil and ground water sampling of Geoprobe borings, construction and the sampling and testing of ground water monitoring wells in several locations on the subject property. The site is located at 3200 20th Street East, Fife, Washington. Services provided for this project were authorized by Mr. Rob Grenley and Mr. Greg Stewart on August 15, 2002.

The primary purpose of this investigation is to determine the concentration and extent of ground water contamination previously identified at the site in a Limited Site Investigation Report prepared by Bristol Environmental in August 2002. In addition, this investigation was performed to determine the local ground water gradient as well as to determine whether related soil contamination was present at the site.

1.2 Project Summary

Ten soil borings were placed on the subject property in an attempt to delineate the contaminant plume identified in a study performed by Bristol Environmental. Seven of the ten borings reached ground water. After the information from the Geoprobe borings was reviewed, monitoring well locations were selected based on the findings. Six ground water monitoring wells were developed to approximately 18-feet below the ground surface. A survey was conducted to determine relative elevations of the wells. This data facilitated determining the depth to ground water and ground water flow direction.

The soil borings were placed in the area surrounding the in-service underground storage tanks located on the property. These borings were developed to the ground water interface at approximately 10-feet below the ground surface. Soil and ground water samples obtained were screened using visual characteristics, odor, sheen and portable field instrumentation (photoionization detector – soil only). Chemical testing was conducted for the presence of Benzene, Toluene, Ethylbenzene and Xylenes by EPA Test Method 8021B and gasoline-range petroleum hydrocarbons by Ecology Test Method NWTPH-Gx.

Ground water samples were obtained from each monitoring well. Samples obtained were screened using visual characteristics, odor, sheen and portable field instrumentation (photoionization detector). Chemical testing was conducted for the presence of MTBE, Benzene, Toluene, Ethylbenzene and Xylenes by the EPA Test Methods outlined above.

This written report provides documentation of site activities, field screening and laboratory analysis. This report contains a complete discussion of the remedial investigation conducted and includes our recommendations for further remedial activities.

1.3 Project Personnel

Project Manager:	Franz A. Carmine
Senior Environmental Scientist:	John F. Hildenbrand
Principal:	Dennis E. Salt
Private Locate:	Applied Professional Services
Drilling Contractor:	Cascade Drilling, Inc.
Laboratory:	Environmental Services Northwest, Inc.
Hydrogeological Services:	Robinson & Noble, Inc.

2.0 BACKGROUND INFORMATION

2.1 Site Identification

The subject site is situated between 20th Street East and Interstate-5 in a commercial and industrial area. More specifically, the site is located at 3200 20th Street East, Fife, Washington 98424. The site consists of an asphalt-paved cardlock fueling station. The site contains a canopy, pump island, weigh-scale, scale-house and restroom facilities on 51,836 square-feet of land.

2.2 Regional Geology/Hydrogeology

The primary soils at this site, as mapped by the **Soil Survey of Pierce County Area, U.S. Department of Agriculture**, are Sultan silt loam. This nearly level soil is moderately well drained. This soil is located on the bottom lands of the Puyallup and White Rivers from sea level to approximately 100-feet in elevation. Soil permeability is moderately slow, with a high available water capacity. This soil exhibits a slight erosion hazard. In addition to the primary soils, areas of fill (usually marine dredge spoils) are not uncommon.

According to the Ground Water Resource Evaluation, Existing and New Supply Areas, 1986, City of Tacoma, the subject site is located within the Lower Puyallup River Valley. This area serves as the collection point for ground water near the Puyallup River and neighboring upland areas. The subsurface geology of the area proximal to the subject site exhibits fine grained particles consistent with deposition in terminal river valleys. Alluvial sediments generally overlay formations that are more permeable. Depth to ground water generally ranges from 5 to 15 feet and may be influenced by tides and seasonal fluctuations. Ground water flow direction is estimated to trend generally toward the north, northwest.

2.3 Previous Investigations/Activities

In August 2002, Bristol Environmental conducted a Limited Phase II Environmental Site Investigation at the Fife Cardlock Fuel facility. Two in-service underground storage tanks (USTs) containing gasoline and diesel are located on the site. Bristol Environmental attempted to determine the concentration and extent of a known gasoline release relating to periodic overfilling of a product overflow tank. The analytical test results, from soil and water samples obtained from the borings, indicated concentrations of gasoline-range petroleum hydrocarbons in water that exceeded the Model Toxics Control Act (MTCA) Method A cleanup level. According to the report, the UST area was primarily impacted by the contamination. Ground water was encountered at approximately 10 feet below the ground surface during the placement of the borings. The report recommended that further assessment of site conditions and further investigation of the shallow ground water system beneath the site for possible impact by gasoline-range petroleum hydrocarbons.

3.0 SITE ACTIVITIES

3.1 Initial Subsurface Soil and Ground Water Investigation

Saltbush personnel were on-site on October 4, 2002 with Applied Professional Services (APS), a private utility locate service, to determine the locations of underground utilities and adjust any boring locations as necessary. Saltbush personnel were then on-site October 7, 2002 with Cascade Drilling Inc. (Cascade) and Environmental Services Northwest (ESN) to conduct field monitoring and sampling of soil borings placed on the subject. Ten borings were placed on the subject property by Cascade using a Geoprobe (direct push hydraulic drilling rig). The borings were placed around the in-service USTs and the adjacent pump island. The borings were continuously logged and field-screened using a photoionization detector (PID), in addition to visual and olfactory methods of observation.

The borings were placed in an attempt to characterize the type, concentration and extent of the contaminants encountered in the previous study, performed by Bristol Environmental. The borings were sampled for both soil and ground water and the samples were submitted to the mobile laboratory provided by ESN. The analytical results from the samples aided in the determination of monitoring well placements.

3.1.1 Soil Sampling

Seventeen soil samples were collected and field screened. All soils collected by the Geoprobe drill rig were field screened. Select soil samples of the screened soil were taken with clean, stainless steel spoons and placed into clean, laboratory-supplied 4-ounce glass sample jars. The depths at which samples were taken were determined by two factors: the likelihood of contamination being present and the field screening results. Eleven of the seventeen soil samples collected were submitted for laboratory analysis. Each sample was marked with an individual identification number, documented with the date, time and location of sample and transported directly to the ESN mobile laboratory for analysis. All samples were analyzed for gasoline-range petroleum hydrocarbons and Benzene, Toluene, Ethylbenzene and total Xylenes. Boring locations are marked on the Site Diagram, located in Appendix 1. Soil sample results are located on Section 4.2, Table 2.

3.1.2 Ground Water Sampling – Geoprobe Borings

Seven ground water samples were collected from the Geoprobe borings. Sampling was accomplished by the use of a 12-volt peristaltic pump. Samples were placed into laboratory-supplied, pre-cleaned containers with the proper preservatives. All samples were immediately placed into an ice chest and delivered to the ESN mobile laboratory on-site, for testing. Ground water sample results are located on Section 4.2, Table 3.

3.2 Ground Water Monitoring Well Construction

Six ground water monitoring wells were placed on the site October 8, 2002 and are labeled on the site diagram as MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6. These wells were advanced to an average depth of 18-feet below the ground surface. Ground water was encountered at an average depth of 9-feet below the ground surface.

3.2.1 Monitoring Well #1

MW-1 was drilled approximately 12-feet south of a curb denoting the north property boundary (please refer to the Site Diagram, located in Appendix 1). 'Pit run' fill material was observed below the asphalt paving to a depth of 3-3.5-feet below the ground surface. This fill material is underlain by a sandy silt, interbedded with a clayey silt material to the base of the wells, approximately 18-feet below the ground surface. The well was constructed with two-inch diameter schedule 40 PVC coupled with flush threaded joints. Ten feet of 0.020-inch slot PVC screen was installed with a slip cap screwed to the end of the assembly as a bottom cap. Blank PVC riser extends from the top of the screen, at 5-feet, to just below the ground surface. The screen is packed in Colorado Silica Products 10-20 sand. The filter pack extends from the bottom of the boring to 3-feet below the ground surface. The remaining space is filled with hydrated bentonite chips to within one foot of the surface. The flush monument was set in a concrete pad.

3.2.2 Monitoring Well #2

MW-2 was drilled approximately 59-feet south of a curb denoting the north property boundary (please refer to the Site Diagram, located in Appendix 1). Pit run fill material was observed below the asphalt paving to a depth of 3-3.5-feet below the ground surface. This fill material is underlain by a sandy silt, interspersed with a clayey silt material to 18-feet below the ground surface. The well was constructed in the same fashion as MW-1.

3.2.3 Monitoring Well #3

MW-3 was drilled approximately 3.5-feet south of a curb denoting the north property boundary (please refer to the Site Diagram, located in Appendix 1). Pit run fill material was observed below the asphalt paving to a depth of 3-3.5-feet below the ground surface. This fill material is underlain by a sandy silt, interspersed with a clayey silt material to 18-feet below the ground surface. The well was constructed in the same fashion as MW-1.

3.2.4 Monitoring Well #4

MW-4 was drilled approximately 39-feet north of a curb running along the south boundary of the fueling station (please refer to the Site Diagram, located in Appendix 1). Pit run fill material was observed below the asphalt paving to a depth of 3-3.5-feet below the ground surface. This fill material is underlain by a sandy silt, interspersed with a clayey silt material to 18-feet below the ground surface. The well was constructed in the same fashion as MW-1.

3.2.5 Monitoring Well #5

MW-5 was drilled approximately 19.5-feet south of a curb running along the north boundary of the fueling station (please refer to the Site Diagram, located in Appendix 1). Pit run fill material was observed below the asphalt paving to a depth of 3-3.5-feet below the ground surface. This fill material is underlain by a sandy silt, interspersed with a clayey silt material to 18-feet below the ground surface. The well was constructed in the same fashion as MW-1.

3.2.6 Monitoring Well #6

MW-6 was drilled approximately 67.5-feet south of a curb running along the north boundary of the fueling station (please refer to the Site Diagram, located in Appendix 1). Pit run fill material was observed below the asphalt paving to a depth of 3-3.5-feet below the ground surface. This fill material is underlain by a sandy silt, interspersed with a clayey silt material to 18-feet below the ground surface. The well was constructed in the same fashion as MW-1.

3.3 Monitoring Well Survey/Ground Water Elevation

A survey was conducted to determine the relative elevations of the monitoring wells. To accomplish this survey, a temporary bench mark (TBM) was established at the ground level of MW-5. An elevation of 100-feet was assigned to the TBM to establish a common height. The following table provides the relative elevation, the depth to ground water and the relative ground water elevation of each monitoring well. This information facilitates the determination of ground water flow direction. The information below indicates the predominant ground water gradient is in a northward direction, however ground water contours indicate a slight southward gradient along the southeast section of the site, toward an adjacent stormwater retention pond. The flow direction appears to fluctuate based on a variety of local environmental factors including heavy rainfall, extreme tides (causing increased water levels) and possibly, local construction. The presence of up-gradient storm water retention ponds, drainages and ditches provide an additional source of surface water infiltration, which may also cause ground water levels at the subject to increase. Please refer to the Ground Water Surface Contour Map, located in Appendix 1, for further information.

Table # 1: **Depth to Ground Water/Ground Water Elevations**

Location	Surface Elevation*	Depth to Ground Water	Ground Water Elevation*
MW-1	100.43 ft	9.05 ft	91.38 ft
MW-2	100.96 ft	9.24 ft	91.72 ft
MW-3	102.13 ft	10.44 ft	91.69 ft
MW-4	101.29 ft	9.48 ft	91.81 ft
MW-5	100.00 ft	8.75 ft	91.25 ft
MW-6	101.37 ft	9.50 ft	91.87 ft

* Elevation is relative to TBM (100.0 feet) and does not denote actual elevation.
See site diagram for location of TBM and monitoring wells.

3.4 Ground Water Sampling – Monitoring Wells

Ground water sampling of the monitoring wells was conducted by Saltbush personnel on October 9, 2002. Sampling was accomplished by the use of disposable bailers. The proper purging of at least three volumes of water was also accomplished using this method. During the purging phase the water was tested for pH, temperature, specific conductance and total dissolved solids.

After purging of each well was completed and test parameters were stabilized, samples were taken using a bailer. Samples were placed into laboratory-supplied, pre-cleaned containers with the proper preservatives. All samples were immediately placed into an ice chest and maintained at approximately 4° Celsius. A chain-of-custody was prepared and all the samples were

delivered to Environmental Services Northwest, Inc., Lacey, Washington, for testing. Sample analytical results are located in Section 4.2, Table 4.

4.0 SAMPLE ANALYSIS RESULTS

4.1 Analytical Methods

4.1.1 Method NWTPH-Gx

Ecology Method NWTPH-Gx is the qualitative and quantitative method (extended) for volatile ("gasoline") petroleum products in soil and water. Petroleum products applicable for this method include aviation and automotive gasolines, mineral spirits, stoddard solvent and naptha.

4.1.2 EPA Method 8021B

EPA Method 8021B is used to quantify Methyl Tertiary Butyl Ether (MTBE), Benzene, Toluene, Ethylbenzene and Xylenes.

The detection limits of all analytical procedures coincided with the detection limits necessary to determine cleanup levels as established by the Model Toxics Control Act (MTCA). Analytical methods used to evaluate the effectiveness of a cleanup action were compliant with the requirements in 173-340-707 WAC and 173-340-830 WAC.

4.2 Analytical Results

4.2.1 Laboratory Analytical Results of Soil and Ground Water Samples - Borings

Eleven soil samples were delivered to the on-site laboratory for chemical analysis. Samples were analyzed for Benzene, Ethylbenzene, Toluene and Xylenes (BTEX) (EPA Test Method 8021B), and gasoline-range hydrocarbons (Ecology Test Method NWTPH-Gx). Test results reflected levels of Benzene above the MTCA Method A cleanup level for soil in samples BH1-7-9, BH2-5-7, BH2-7-9 and BH5-7-9. Contaminant concentrations are detailed below in Table 2. Please refer to the Site Diagram, Appendix 1 for boring locations.

Table # 2: Soil Test Results - Borings
(Results in mg/kg)

Sample ID	Depth	Benzene	Toluene	Ethylbenzene	Xylenes	Gasoline
BH1-5-7	5'-7'	ND	ND	ND	ND	ND
BH1-7-9	7'-9'	**0.21**	ND	ND	0.18	ND
BH2-5-7	5'-7'	**0.28**	ND	ND	0.08	ND
BH2-7-9	7'-9'	**1.1**	ND	ND	0.05	16
BH3-5-7	5'-7'	ND	ND	ND	ND	ND
BH3-7-9	7'-9'	ND	ND	ND	ND	ND
BH5-5-7	5'-7'	ND	ND	ND	ND	ND
BH5-7-9	7'-9'	**0.08**	ND	ND	ND	ND
BH6-5-7	5'-7'	ND	ND	ND	ND	ND
BH6-7-9	7'-9'	ND	ND	ND	ND	ND
MTCA Method A	-	**0.03**	7	**6**	9	**30***

Bold type indicates level above MTCA Method A levels for Soil.
*Gasoline mixtures with greater than 1% Benzene present.
ND indicates less than method detection limit.
NT indicates not tested.

Seven ground water samples, collected from the Geoprobe borings, were delivered to the mobile laboratory for chemical analysis. Samples were analyzed for Benzene, Ethylbenzene, Toluene and Xylenes (BTEX) (EPA Test Method 8021B), and gasoline-range hydrocarbons (Ecology Test Method NWTPH-Gx). Test results reflected levels of target analytes above the MTCA Method A cleanup level for ground water in samples BH1-W, BH2-W, BH3-W and BH5-W. Contaminant concentrations are detailed below, in Table 3. Please refer to the Site Diagram, Appendix 1 for boring locations.

Table # 3: Ground Water Test Results - Borings
(Results in µg/L)

Sample ID	Depth	Benzene	Toluene	Ethylbenzene	Xylenes	Gasoline
BH1-W	9'-10'	**1,800**	ND	ND	**49**	**4,000**
BH2-W	9'-10'	**32**	ND	ND	**11**	620
BH3-W	9'-10'	**14**	ND	ND	ND	ND
BH5-W	9'-10'	**140**	ND	ND	ND	780
BH6-W	9'-10'	ND	ND	ND	ND	ND
BH8-W	9'-10'	ND	ND	ND	ND	ND
BH9-W	9'-10'	ND	ND	ND	ND	ND
MTCA Method A	-	**5**	30	**700**	**20**	**800***

Bold type indicates level above MTCA Method A levels for ground water.
*Gasoline Range Organics with Benzene present in ground water
ND indicates less than method detection limit.

4.2.2 Laboratory Analytical Results of Ground Water Samples – Monitoring Wells

Six samples were delivered to the laboratory for chemical analysis. These samples were analyzed for MTBE, Benzene, Ethylbenzene, Toluene and Xylenes (BTEX) (EPA Test Method 8021B), and gasoline-range hydrocarbons (Ecology Test Method NWTPH-Gx).

Analysis for BTEX and gasoline-range hydrocarbons indicated levels below the method practical quantitative limit (PQL) in monitoring wells MW-1, MW-2, MW-5 and MW-6. Test results for monitoring well MW-4 indicated elevated concentrations of Benzene and total Xylenes above the method PQL, with levels of Benzene (14 µg/L) above the MTCA Method A cleanup levels for ground water. MW-3 indicated levels of Benzene (360.0 µg/L), total Xylenes (42.0 µg/L) and gasoline-range petroleum hydrocarbons (1,300 µg/L) concentrations above the MTCA Method A cleanup levels for ground water. The following table summarizes the laboratory test results.

Table # 4: Ground Water Test Results – Monitoring Wells
(Results in µg/L)

Sample ID/ Analyte	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MTCA Method A Cleanup Level
Benzene	ND	ND	**360**	**14**	ND	ND	**5.0**
Toluene	ND	ND	ND	ND	ND	ND	**30.0**
Ethylbenzene	ND	ND	ND	ND	ND	ND	**700.0**
Total Xylenes	ND	ND	**42**	**2.0**	ND	ND	**20.0**
Gasoline	ND	ND	**1,300**	ND	ND	ND	**800.0***
MTBE	ND	ND	ND	ND	ND	ND	**20.0**

Bold type indicates level above MTCA Method A levels for ground water.
*Gasoline Range Organics with Benzene present in ground water
ND indicates less than method detection limit.

5.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

5.1 Sample Collection

Samples were placed directly into pre-cleaned laboratory-prepared glass sample jars, after visual observation and PID field screening. Samples were immediately tranferred to a cooler after completion of labeling. Samples were maintained at approximately 4 °C.

5.2 Chain-of-Custody

Samples sent to both the on- and off-site laboratories were appropriately logged on a correctly completed chain-of-custody form. The form was reviewed by the project manager for completeness and no inconsistencies were noted.

5.3 Quality Assurance/Quality Control (QA/QC)

There were no significant problems or deviations reported by the analytical laboratory (ESN).

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 Soil

Ten soil borings were drilled in the location of the in-service gasoline USTs on October 7, 2002. The borings were developed to approximately 15 feet below ground surface (bgs), however ground water was encountered at approximately 10 feet bgs. Soil samples were collected from the seven successful borings above the soil-ground water interface and analyzed for Benzene, Ethylbenzene, Toluene and Xylenes and gasoline-range hydrocarbons. Test results reflected levels of Benzene above the MTCA Method A cleanup level for soil in samples BH1-7-9, BH2-5-7, BH2-7-9 and BH5-7-9. The extent of soil contamination is unknown.

6.1.2 Ground Water

Seven of the ten soil borings drilled on the subject reached ground water at approximately 10-feet below ground surface. Ground water samples collected from the soil borings were analyzed for Benzene, Ethylbenzene, Toluene, Xylenes and gasoline-range hydrocarbons. Test results reflected levels of target analytes above the MTCA Method A cleanup level for ground water in samples BH1-W, BH2-W, BH3-W and BH5-W. The analytical results were primarily utilized for monitoring well placements.

Six ground water monitoring wells were placed on the site on October 8, 2002 and are labeled on the site diagram as MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6. These wells were advanced to an average depth of 18 feet below the ground surface. Ground water was encountered at an average depth of 9 feet below the ground surface. An initial round of sampling was conducted on October 9, 1999 by Saltbush Environmental Services, Inc. Six samples were delivered to the laboratory for chemical analysis. These samples were analyzed for MTBE, Benzene, Ethylbenzene, Toluene and Xylenes and gasoline-range hydrocarbons. Test results for monitoring well MW-4 indicated elevated concentrations of Benzene and total Xylenes above the method PQL, with levels of Benzene (14 µg/L) above the MTCA Method A cleanup levels for ground water. MW-3 indicated levels of Benzene (360.0 µg/L), total Xylenes (42.0 µg/L) and gasoline-range petroleum hydrocarbons (1,300 µg/L) concentrations above the MTCA Method A cleanup levels for ground water.

The contaminated ground water appears to be limited to the southeast section of the UST area. Based on the ground water information gathered in this study, the gradient in the area appears nearly level. The results appear to indicate that the ground water contamination has not migrated across the site since the time of the product release.

6.2 Recommendations

6.2.1 Soil

Based on the data gathered by this investigation, the extent of contamination appears to be limited to the area south and southeast of the in-service gasoline USTs. Future remedial options

should be explored with primary consideration to ground water. The ground water remediation work plan will also address the smear zone and overlying contaminated soils.

6.2.2 Ground Water

This ground water investigation was conducted because contaminated ground water was encountered during the initial Limited Phase II Investigation performed by Bristol Environmental. Chemical analysis indicated that contamination was found in concentrations that exceed the MTCA Method A cleanup levels for ground water. Considering the level of contamination and the requirements set forth by the Washington Department of Ecology, it is recommended that quarterly monitoring for gasoline-range petroleum hydrocarbons and BTEX be conducted in the six monitoring wells on-site. After the next monitoring event the analytical results will be reviewed and the feasibility of implementing *in-situ* bioremediation using monitoring wells and an Oxygen Release Compound (ORC) on-site will be considered.

7.0 LIMITATIONS

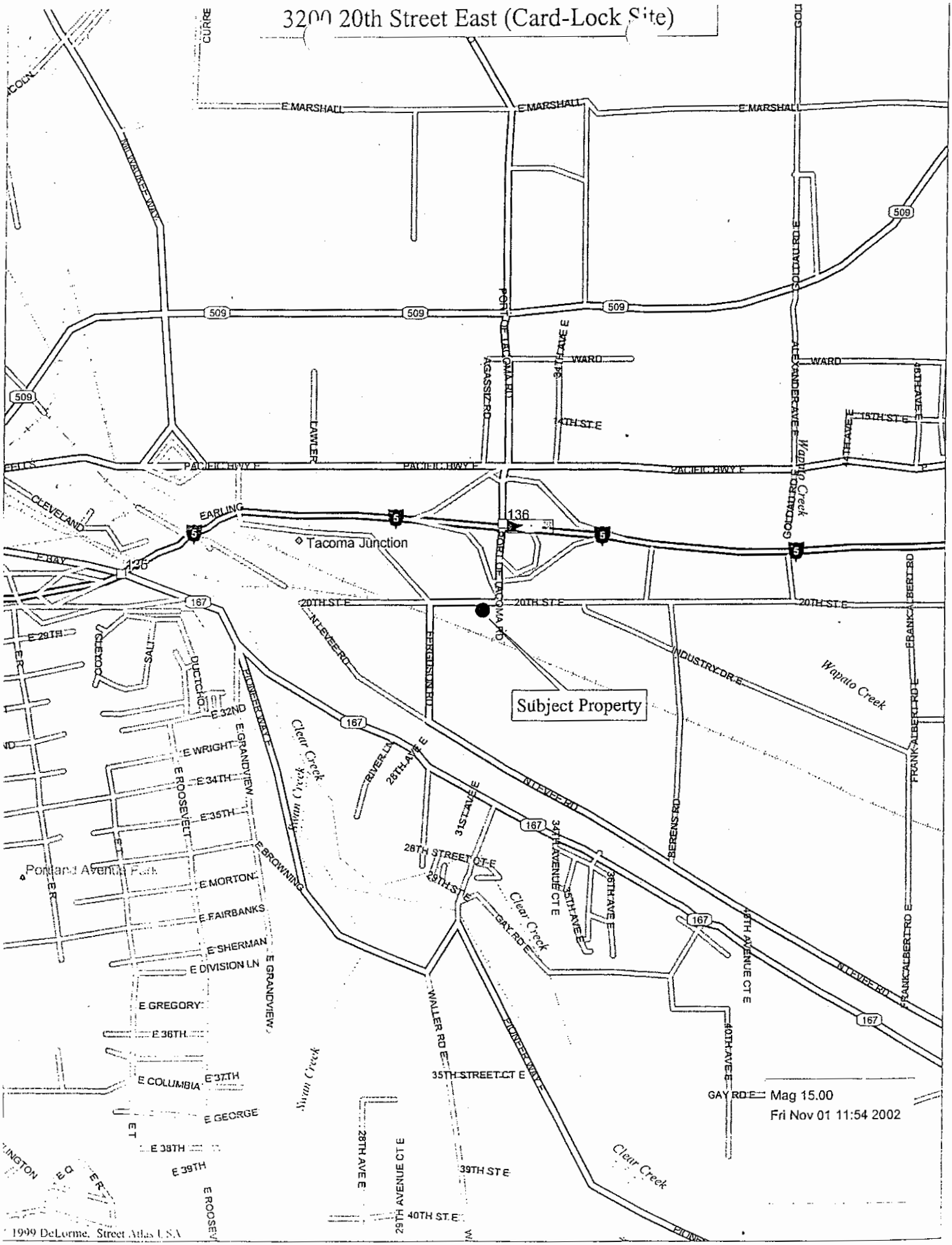
The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. Since site conditions and regulations beyond our control could change at any time after the completion of our site visit, we are not responsible for the impacts of any changes in environmental conditions, standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

8.0 CLOSURE

This concludes the investigation and presentation of material gathered on the herein-described site for the tasks described for this limited study. Saltbush Environmental Services, Inc. will be pleased to assist with any further requirements that may be necessary for this property.

Thank you for allowing us the opportunity to be of service to you. If you have questions regarding this report or require further discussion of any portion of this project, we will be pleased to offer our assistance.


3200 20th Street East (Card-Lock Site)
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PORT OF TACOMA RD
AGASSIZ RD
LAWLER
WARD
14TH ST E
ALEXANDER AVE E
GOLDEN GIVEN RD E
15TH ST E
14TH AVE E
PACIFIC HWY E
Wapato Creek
CLEVELAND
EARLING
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Tacoma Junction
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20TH ST E
N LEVEE RD
FERGUSON RD
INDUSTRY DR E
FRANK ALBERT RD E
Subject Property
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E 29TH
CLEVELAND
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E 32ND
E WRIGHT
E 34TH
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E GRANDVIEW
E BROWNING
E MORTON
E FAIRBANKS
E SHERMAN
E DIVISION LN
E GREGORY
E 36TH
E COLUMBIA
E 37TH
E GEORGE
E 38TH
E 39TH
Portland Avenue Park
PIONEER WAY E
Clear Creek
RIVER LN
26TH AVE E
31ST AVE E
28TH STREET CT E
29TH ST E
34TH AVENUE CT E
35TH AVE E
36TH AVE E
BERENS RD
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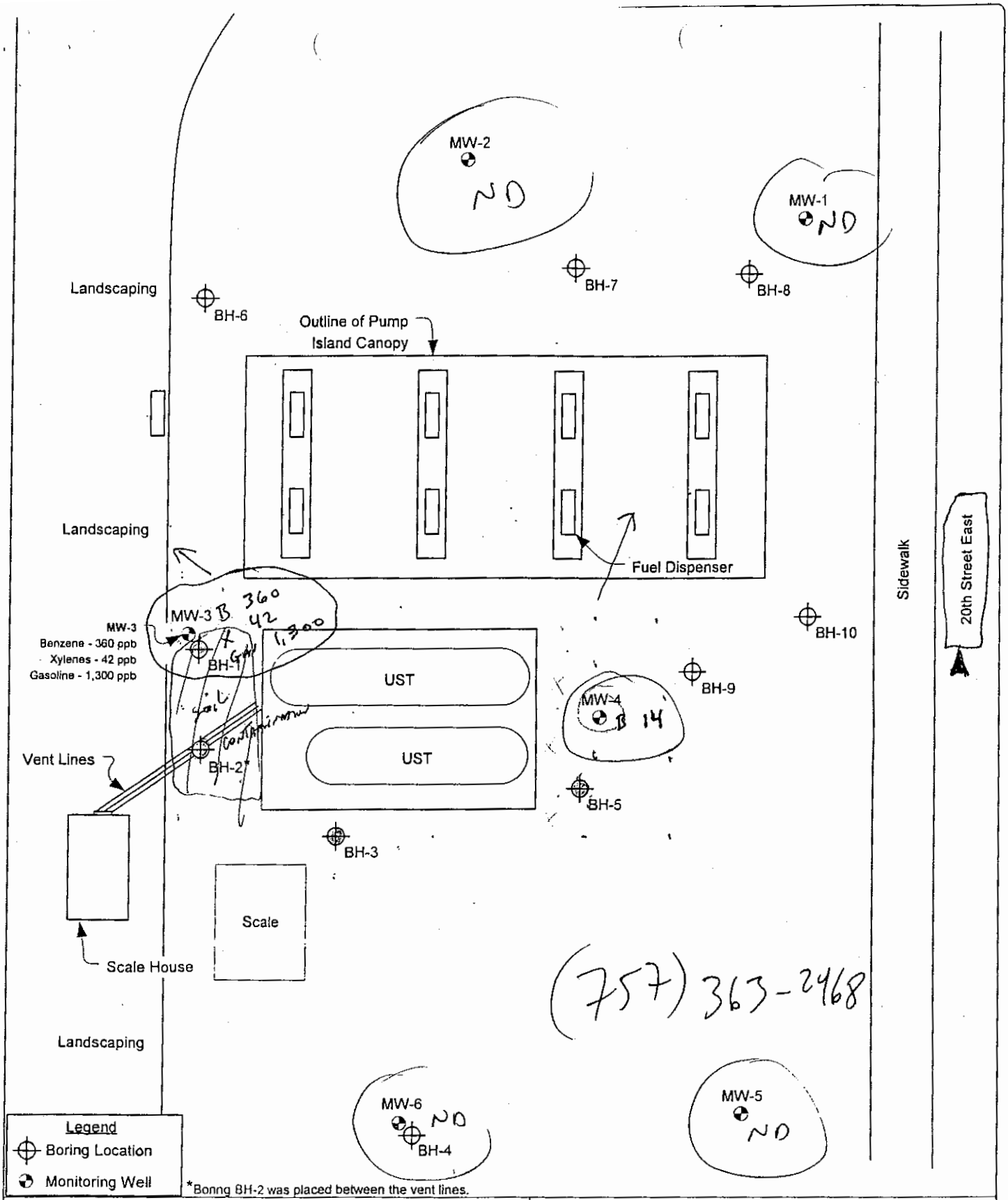

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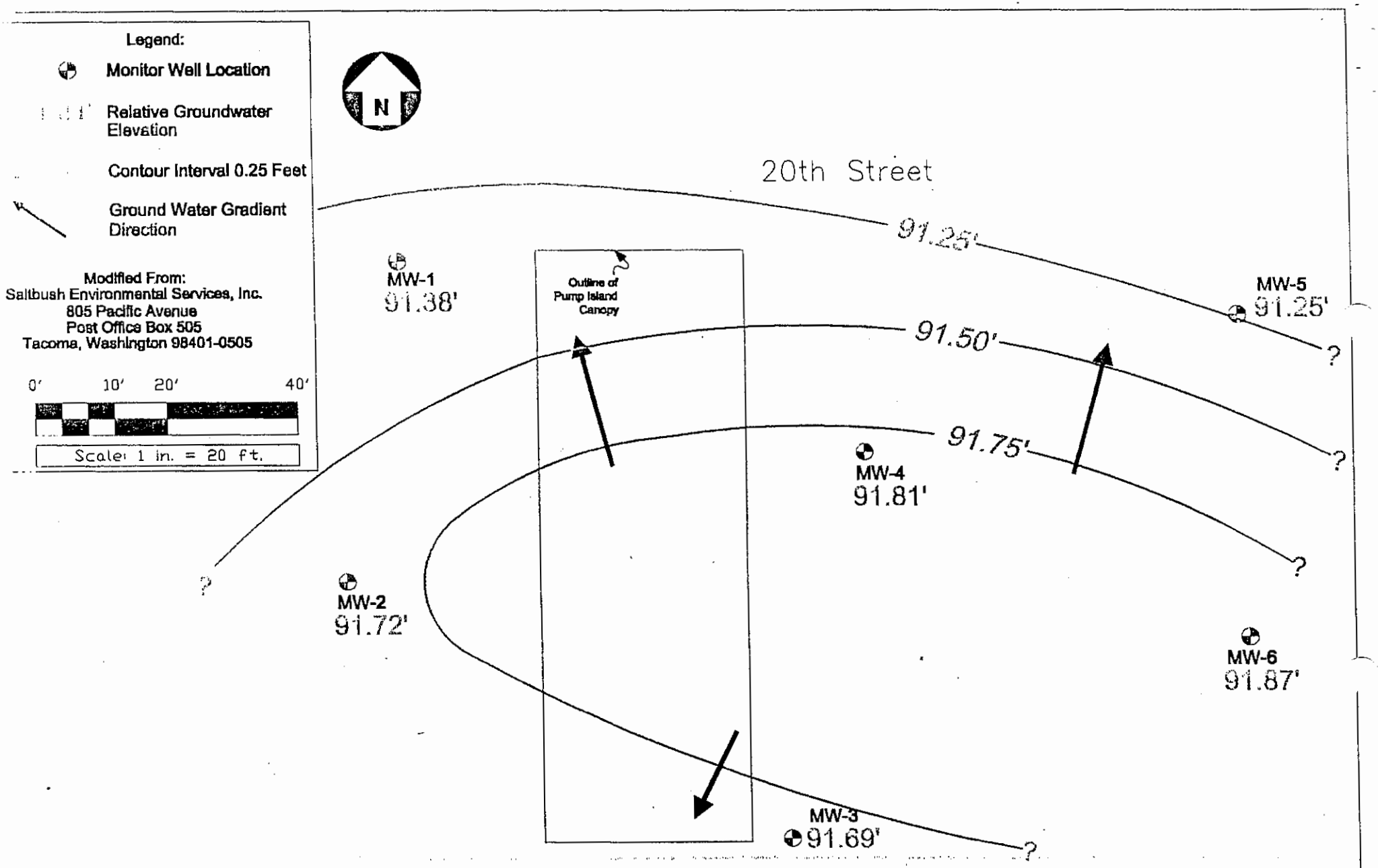
Boring & Monitoring Well Locations
The Fife Cardlock Fuel Facility Project
Tacoma, Washington 98402

Project Number:	Drawn By:	Date:	No Scale	Diagram # 1 of 1
020821477	Franz A. Carmine	October 31, 2002	Locations Estimated	1477-2/Diagram 1

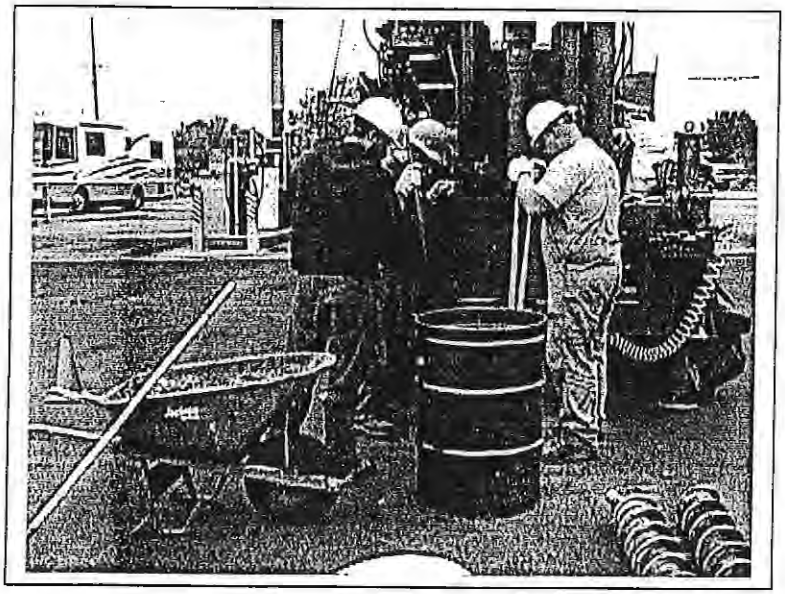


ROBINSON & NOBLE, INC.

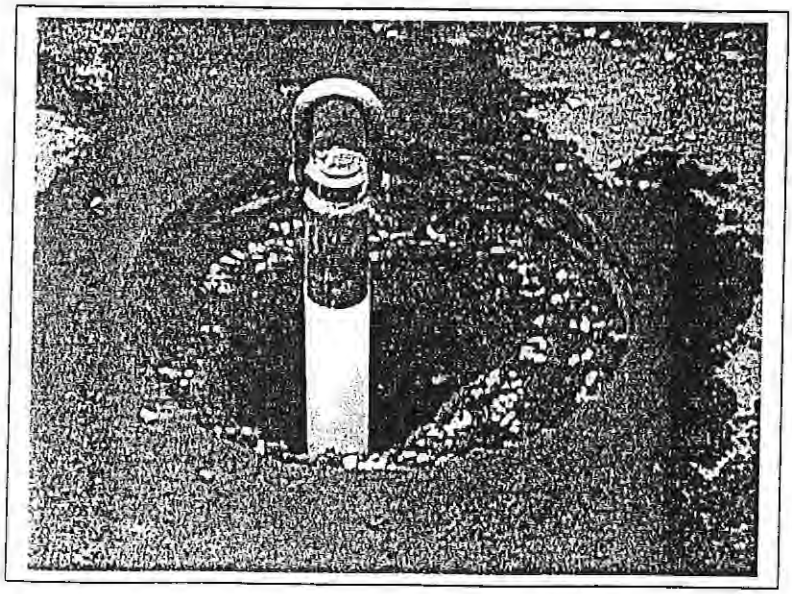
T 20 N/R 3 E - 11
PM: MFP
OCTOBER 2002
JOB. NO. 6704M

FIGURE 8
GROUNDWATER SURFACE CONTOUR MAP
WATER LEVELS MEASURED 10/9/2002
SALTBUSH ENVIRONMENTAL SERVICES, INC.

Overview of site, note vacuum truck.



Placing a monitoring well.



View of well while under construction.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

Fife, Washington
Saltbush Environmental Services, Incorporated
Client Project #1477-2

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Soil

Sample Number	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline (mg/kg)	*MTBE (mg/kg)	Surrogate Recovery (%)
Method Blank	10/7/02	nd	nd	nd	nd	nd	nd	119
LCS	10/7/02	94%	89%	121%	98%	---	---	100
BH-1-5-7	10/7/02	nd	nd	nd	nd	nd	nd	121
BH-1-5-7 Dup	10/7/02	nd	nd	nd	nd	nd	nd	115
BH-1-5-7 MS	10/7/02	98%	88%	121%	91%	---	---	109
BH-1-7-9	10/7/02	0.21	nd	nd	0.18	nd	nd	105
BH2-5-7	10/7/02	0.28	nd	nd	0.08	nd	nd	93
BH2-7-9	10/7/02	1.1	nd	nd	0.05	16	nd	112
BH3-5-7	10/7/02	nd	nd	nd	nd	nd	nd	112
BH3-7-9	10/7/02	nd	nd	nd	nd	nd	nd	128
BH5-5-7	10/7/02	nd	nd	nd	nd	nd	nd	114
BH5-7-9	10/7/02	0.08	nd	nd	nd	nd	nd	118
BH6-5-7	10/7/02	nd	nd	nd	nd	nd	nd	110
BH6-7-9	10/7/02	nd	nd	nd	nd	nd	nd	117
Method Detection Limits		0.02	0.05	0.05	0.05	10	0.05	

"*" Indicates unconfirmed results.
"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene), MS and LCS: 65% TO 135%

ANALYSES PERFORMED BY: Dean Phillips

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

Fife, Washington
Saltbush Environmental Services, Incorporated
Client Project #1477-2

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Water

Sample Number	Date Analyzed	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	Gasoline (ug/l)	*MTBE (ug/l)	Surrogate Recovery (%)
Method Blank	10/7/02	nd	nd	nd	nd	nd	nd	119
BH1-W	10/7/02	1800	nd	nd	49	4000	98	89
BH2-W	10/7/02	32	nd	nd	11	620	42	132
BH3-W	10/7/02	14	nd	nd	nd	nd	nd	79
BH3-W Dup	10/7/02	12	nd	nd	nd	nd	nd	72
BH5-W	10/7/02	140	nd	nd	nd	780	22	131
BH6-W	10/7/02	nd	nd	nd	nd	nd	56	77
BH8-W	10/7/02	nd	nd	nd	nd	nd	nd	114
BH9-W	10/7/02	nd	nd	nd	nd	nd	nd	127
Method Detection Limits		1	1	1	1	100	1	

"*" Indicates unconfirmed results.
"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65% TO 135%

ANALYSES PERFORMED BY: Dean Phillips

ESN NORTHWEST CHEMISTRY LABORATORY

GRENLY / STEWART PROJECT
Fife, Washington
Saltbush Environmental Services, Inc.
Client Project #1477-2

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Water

Sample Number	Date Analyzed	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	Gasoline (ug/l)	mtbe (ug/l)	Surrogate Recovery (%)
Method Blank	10/10/02	nd	nd	nd	nd	nd	nd	89
MW-1	10/10/02	nd	nd	nd	nd	nd	nd	105
MW-2	10/10/02	nd	nd	nd	nd	nd	nd	103
MW-3	10/10/02	360	nd	nd	42	1,300	nd	71
MW-4	10/10/02	14	nd	nd	2.0	nd	nd	100
MW-5	10/10/02	nd	nd	nd	nd	nd	nd	134
MW-6	10/10/02	nd	nd	nd	nd	nd	nd	78
MW-6 Dup.	10/10/02	nd	nd	nd	nd	nd	nd	114
Method Detection Limits		1	1	1	1	100	1	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65% TO 135%

ANALYSES PERFORMED BY: Marilyn Farmer

ESN NORTHWEST | Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: Saltbush Environmental

ADDRESS: 805 Pacific Avenue

PHONE: 253 383 1614 FAX: 253 383 4525

CLIENT PROJECT #: 1099-2 PROJECT MANAGER: FAC

DATE: 10-7-02 PAGE 1 OF

PROJECT NAME: 20th St E.

LOCATION: Fife, WA

COLLECTOR: FAC DATE OF COLLECTION 10-7

Sample Number	Depth	Time	Sample Type	Container Type	VOA 8021B	VOA 8021B BTEX Only	VOA 8260	SEMI VOL 8270	TPH - HCID	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (d & o)	PAH 8100	PAH 8270	PCBs 8082	Pesticides 8081	EPH	VPH	Methamphetamine	Pb	Hex Chrome	NOTES	Total Number of Containers	Laboratory Note Number
1. BH-1-5-7					X				X															
2. BH1-7-9					X				X															
3. BH-1-W					X				X															
4. BH2-5-7					X				X															
5. BH2-7-9					X				X															
6. BH2 W					X				X															
7. BH3-5-7					X				X															
8. BH3-7-9					X				X															
9. BH[illegible]-W					X				X															
10. BH5-5-7					X				X															
11. BH5-7-9					X				X															
12. BH5-W					X				X															
13. BH6-5-7					X				X															
14. BH6-7-9					X				X															
15. [illegible] W					X				X															
16. [illegible]-W					X				X															
17. [illegible]					X				X															
18.																								

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	10/7/02 4:51	[signature]	10-7-02
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ ESN DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:
two samples worth of overtime.

Turn Around Time: 24 HR 48 HR 5 DAY

ESN NORTHWEST | Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: Salbosh Environmental

ADDRESS: 605 Pacific Avenue

PHONE: 253 243 1914 FAX: 253 383 4525

CLIENT PROJECT #: 1177-2 PROJECT MANAGER: FHC

DATE: 10/10/02 PAGE 1 OF 1

PROJECT NAME: Gwenly/Stewart

LOCATION: Fife (20th Street E.)

COLLECTOR: FHC/TM DATE OF COLLECTION: 10/9

Sample Number	Depth	Time	Sample Type	Container Type	VOA 8021B	VOA 8021B BTEX Only	VOA 8260	SEMI VOL 8270	TPH - HCID	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (d & o)	PAH 8100	PAH 8270	PCBs 8082	Pesticides 8081	EPH	VPH	Methamphetamine	Pb	Hex Chrome	MTBE	NOTES	Total Number of Containers	Labo Note Number
1. MW-1	-	-	H_2O	VOA	X				X												X			2	
2. MW-2	-	-			X				X												X				
3. MW-3	-	-			X				X												X				
4. MW-4	-	-			X				X												X		Do not analyze for MTBE		
5. MW-5	-	-			X				X												X				
6. MW-6	-	-			X				X												X				
7.																									
8.																									
9.																									
10.																									
11.																									
12.																									
13.																									
14.																									
15.																									
16.																									
17.																									
18.																									

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
	10/10/02 10:00		10/10/02 10:00
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ ESN DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:
Please analyze all samples for G/BTEX and MTBE

Turn Around Time: (24 HR) 48 HR 5 DAY

Bristol
ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

706 Cedar Avenue
Marysville, WA 98270
360-651-9622 Phone
360-653-7983 Fax

FAX TRANSMITTAL

JOB NO:

DATE: 8/23/02

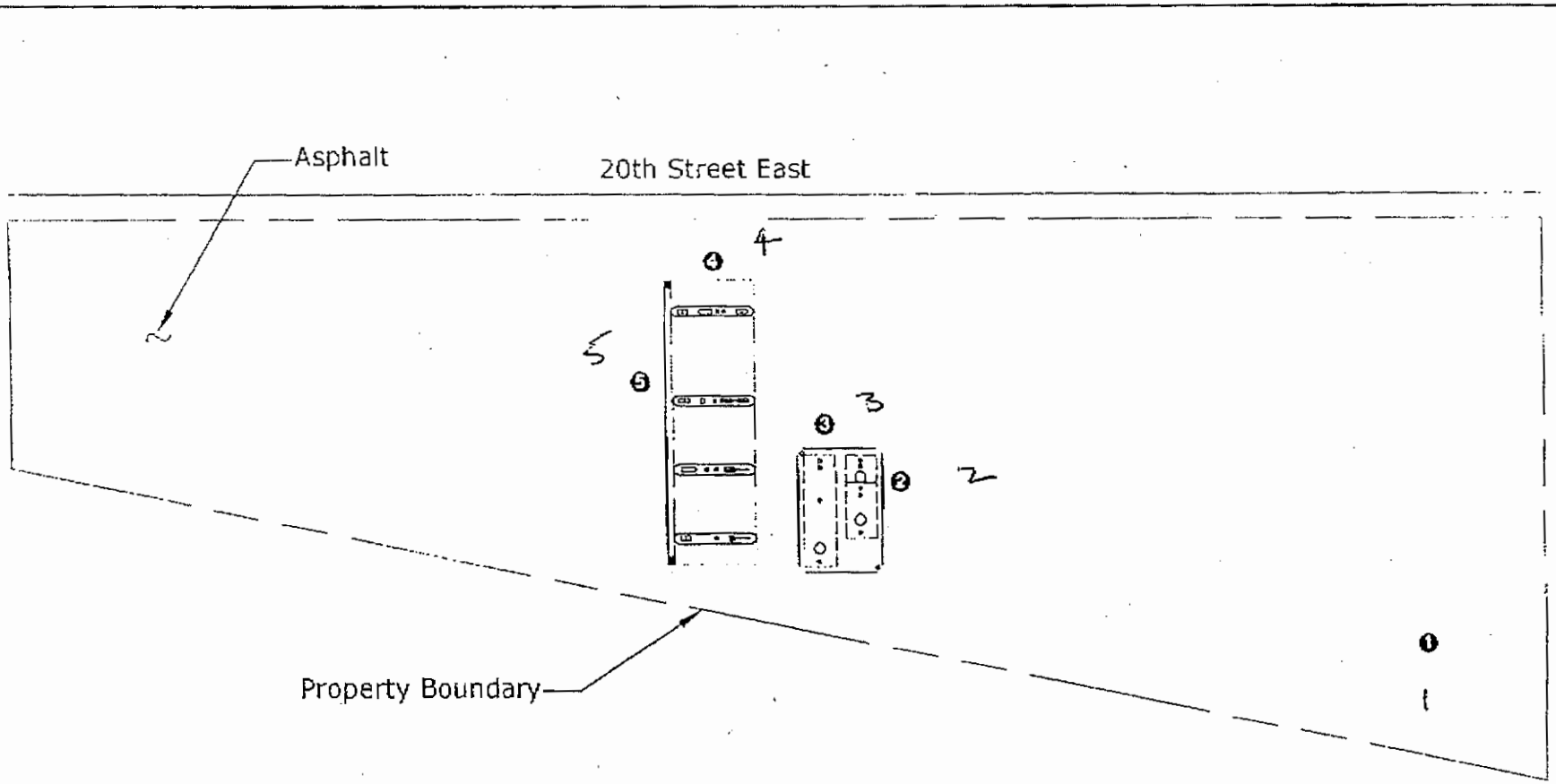
TIME: 10:40

Total number of sheets (including this cover) 4

TO: Dennis Salt FAX NO: 253 383 4525

FROM: Hawk Salt

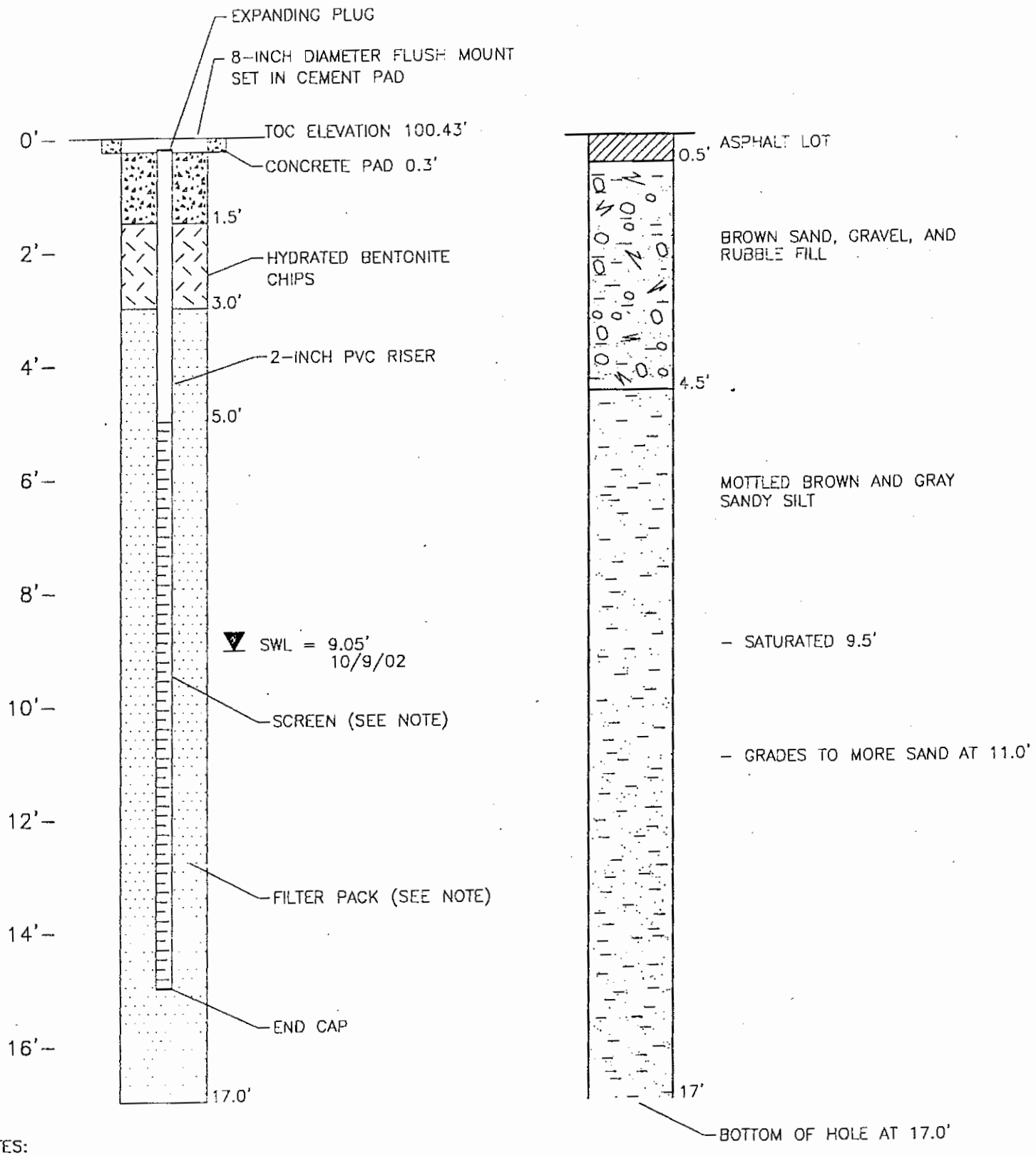
RE: Site maps — CFN Sites



SITE MAP

CFN STATION
2300 20TH STREET EAST
FIFE, WA

Figure 1	Project 23016



NOTES:

10 FEET OF SCREEN, 2-INCH DIAMETER, 20 SLOT (0.020-INCH OPENING) PVC.

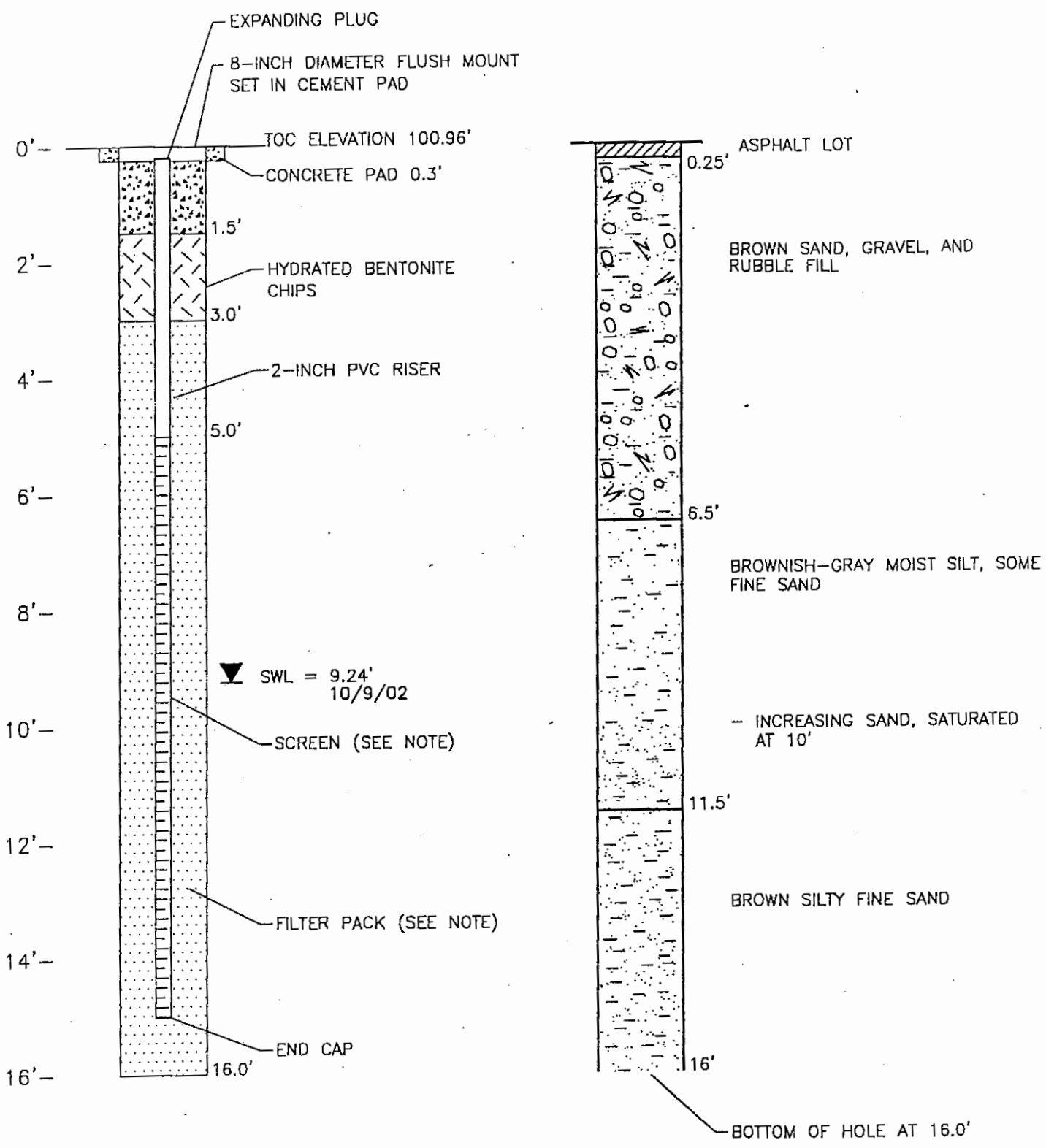
FILTER PACK IS MONTEREY 2X12 PRODUCT

ELEVATION AT TOP OF CASING (TOC) RELATIVE TO SITE BENCHMARK

T 20 N/R 3 E - 11
PM: MFP
OCTOBER 2002

FIGURE 2

MONITORING WELL MW-1 CONSTRUCTION DETAIL AND GEOLOGIC LOG, FIFE CARDLOCK SITE



NOTES:

10 FEET OF SCREEN, 2-INCH DIAMETER, 20 SLOT (0.020-INCH OPENING) PVC.

FILTER PACK IS MONTEREY 2X12 PRODUCT

ELEVATION AT TOP OF CASING (TOC) RELATIVE TO SITE BENCHMARK

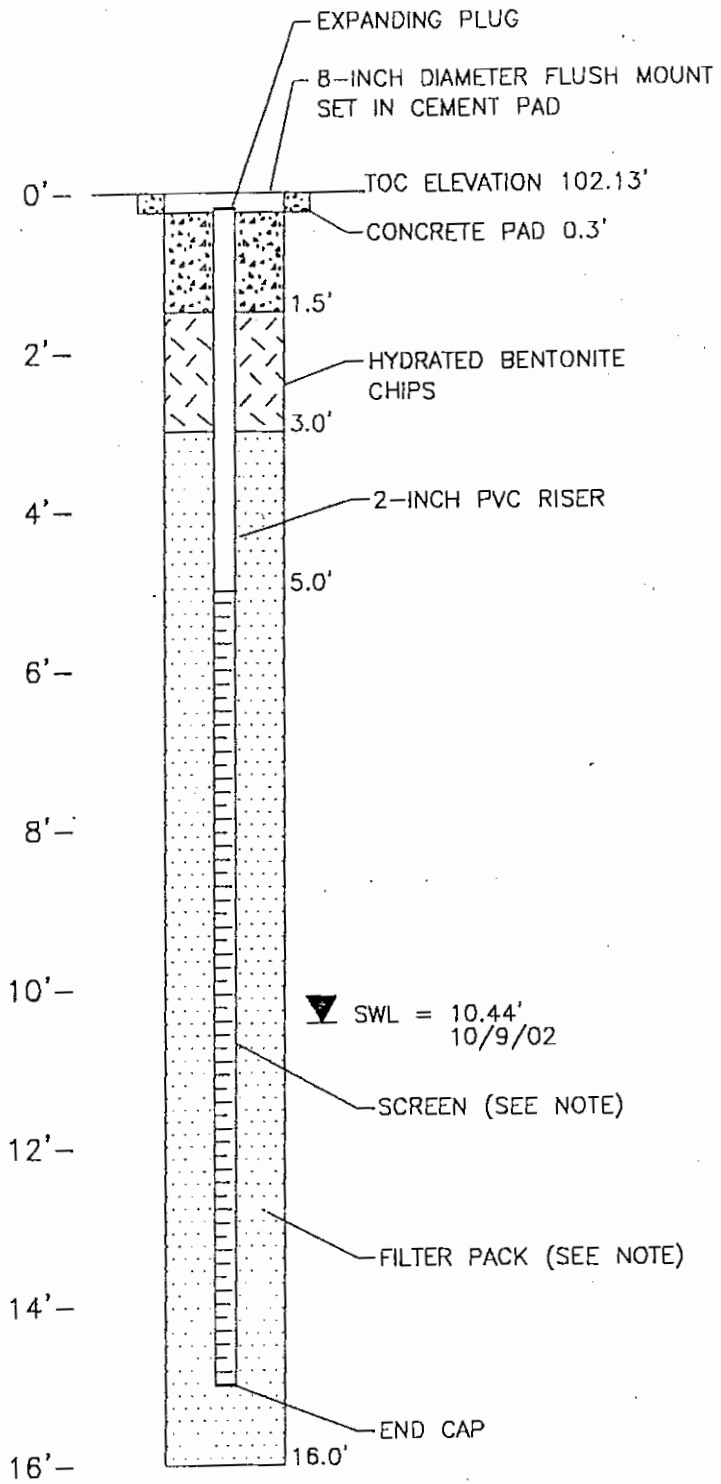
T 20 N/R 3 E - 11
PM: MFP
OCTOBER 2002

FIGURE 3

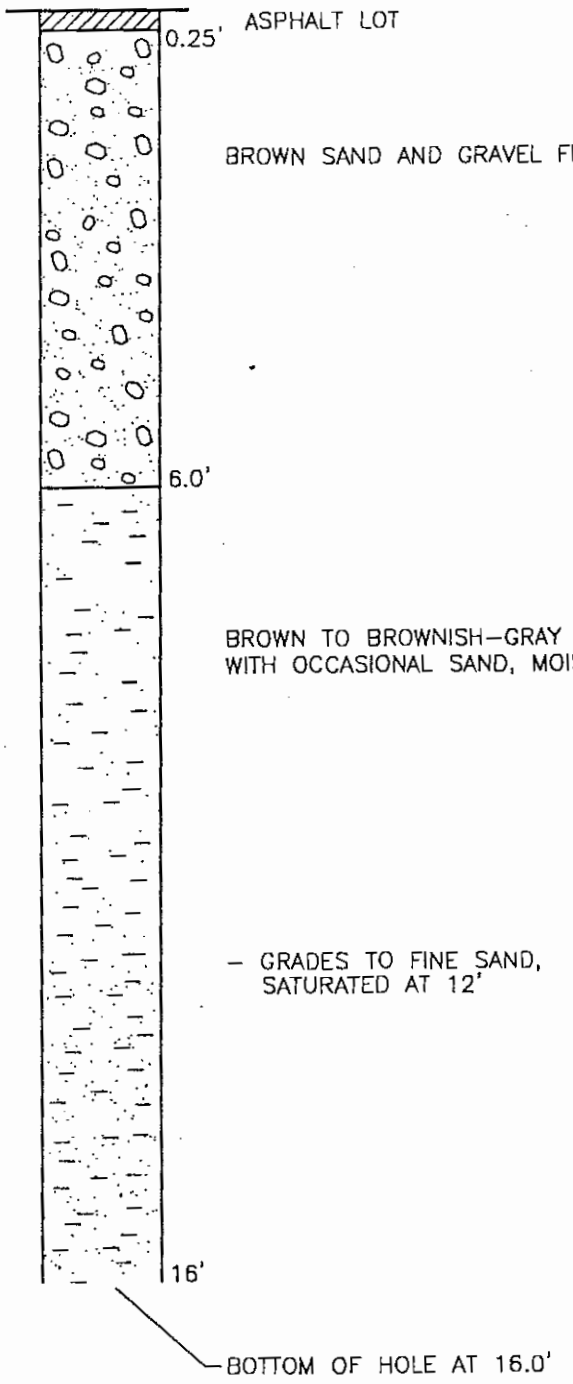
MONITORING WELL MW-2 CONSTRUCTION DETAIL AND GEOLOGIC LOG, FIFE CARDLOCK SITE

SALTBUSH ENVIRONMENTAL SERVICES, INC.

CONSTRUCTION DETAIL



GEOLOGIC LOG



NOTES:

10 FEET OF SCREEN, 2-INCH DIAMETER, 20 SLOT (0.020-INCH OPENING) PVC.

FILTER PACK IS MONTEREY 2X12 PRODUCT

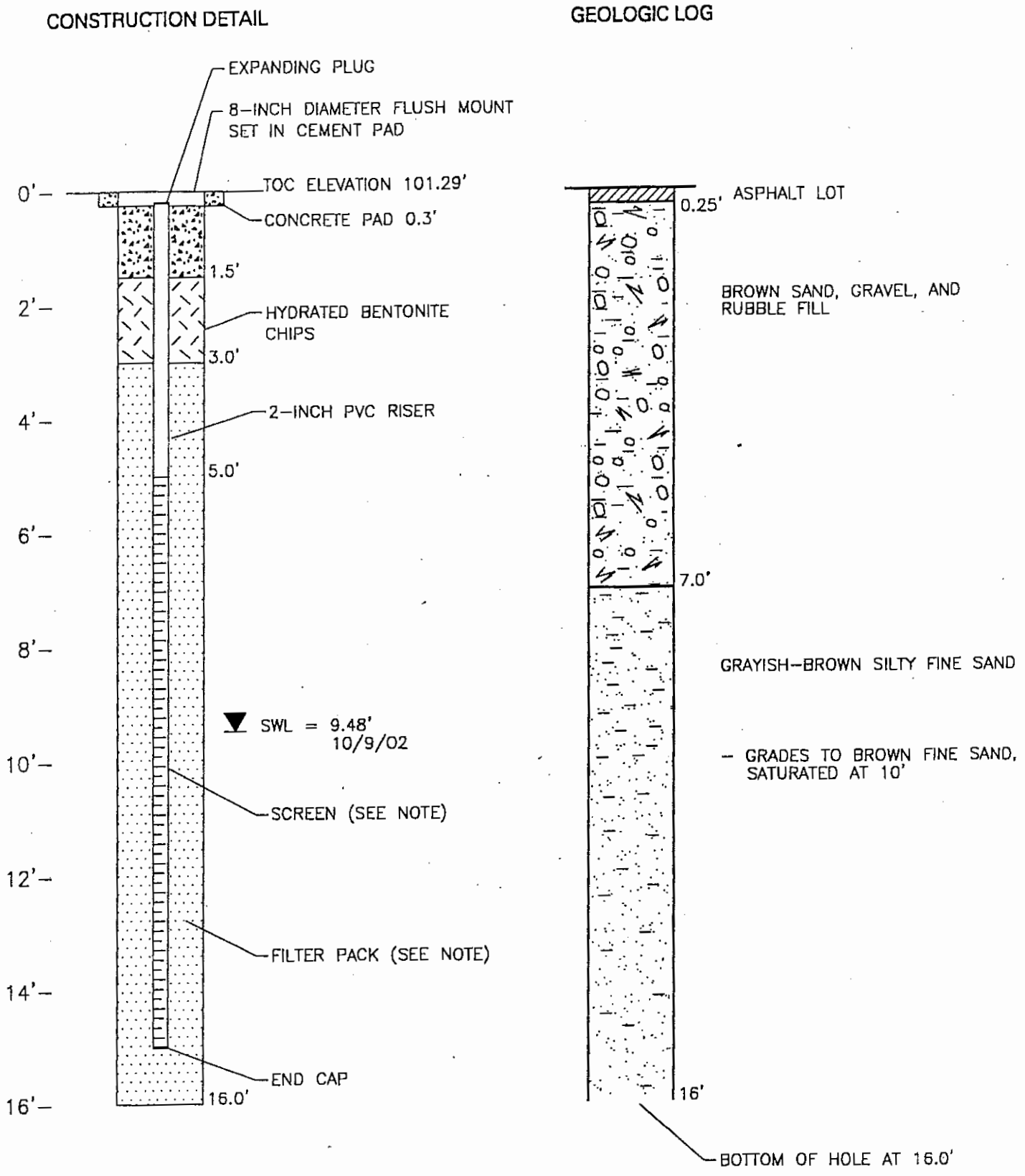
ELEVATION AT TOP OF CASING (TOC) RELATIVE TO SITE BENCHMARK

T 20 N/R 3 E - 11
PM: MFP
OCTOBER 2002

FIGURE 4

MONITORING WELL MW-3 CONSTRUCTION DETAIL AND GEOLOGIC LOG, FIFE CARDLOCK SITE

SALTBUSH ENVIRONMENTAL SERVICES, INC.



NOTES:

10 FEET OF SCREEN, 2-INCH DIAMETER, 20 SLOT (0.020-INCH OPENING) PVC.

FILTER PACK IS MONTEREY 2X12 PRODUCT

ELEVATION AT TOP OF CASING (TOC) RELATIVE TO SITE BENCHMARK

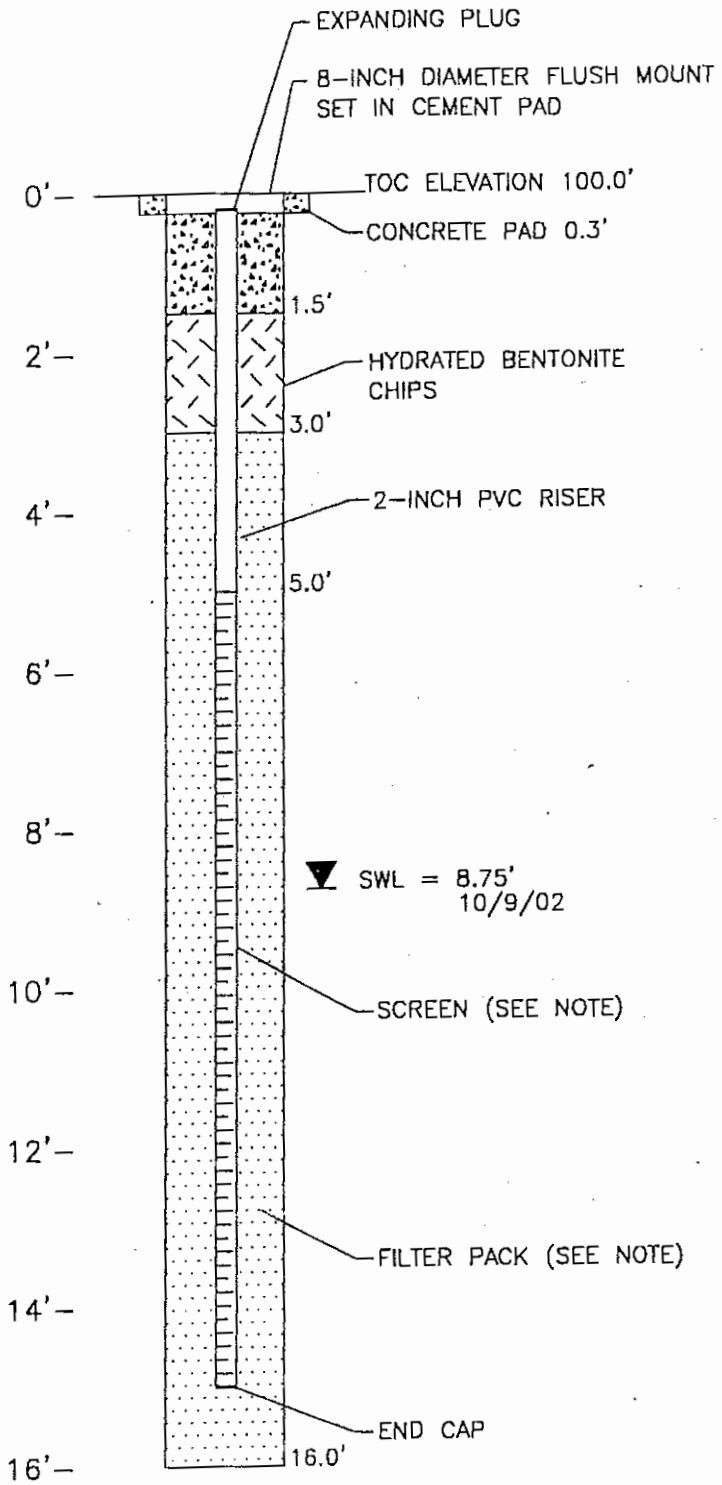
T 20 N/R 3 E - 11
PM: MFP
OCTOBER 2002

FIGURE 5

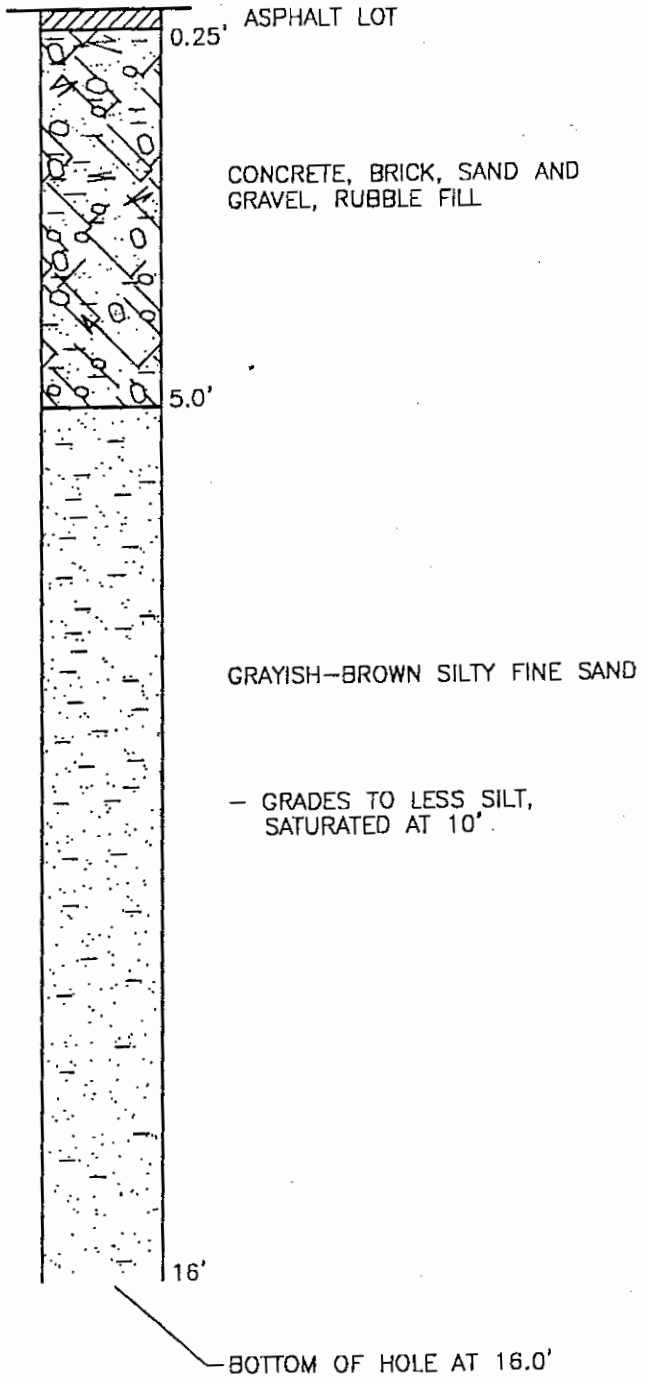
MONITORING WELL MW-4 CONSTRUCTION DETAIL AND GEOLOGIC LOG, FIFE CARDLOCK SITE

SALTRUSH ENVIRONMENTAL SERVICES, INC.

CONSTRUCTION DETAIL



GEOLOGIC LOG



NOTES:

10 FEET OF SCREEN, 2-INCH DIAMETER, 20 SLOT (0.020-INCH OPENING) PVC.

FILTER PACK IS MONTEREY 2X12 PRODUCT

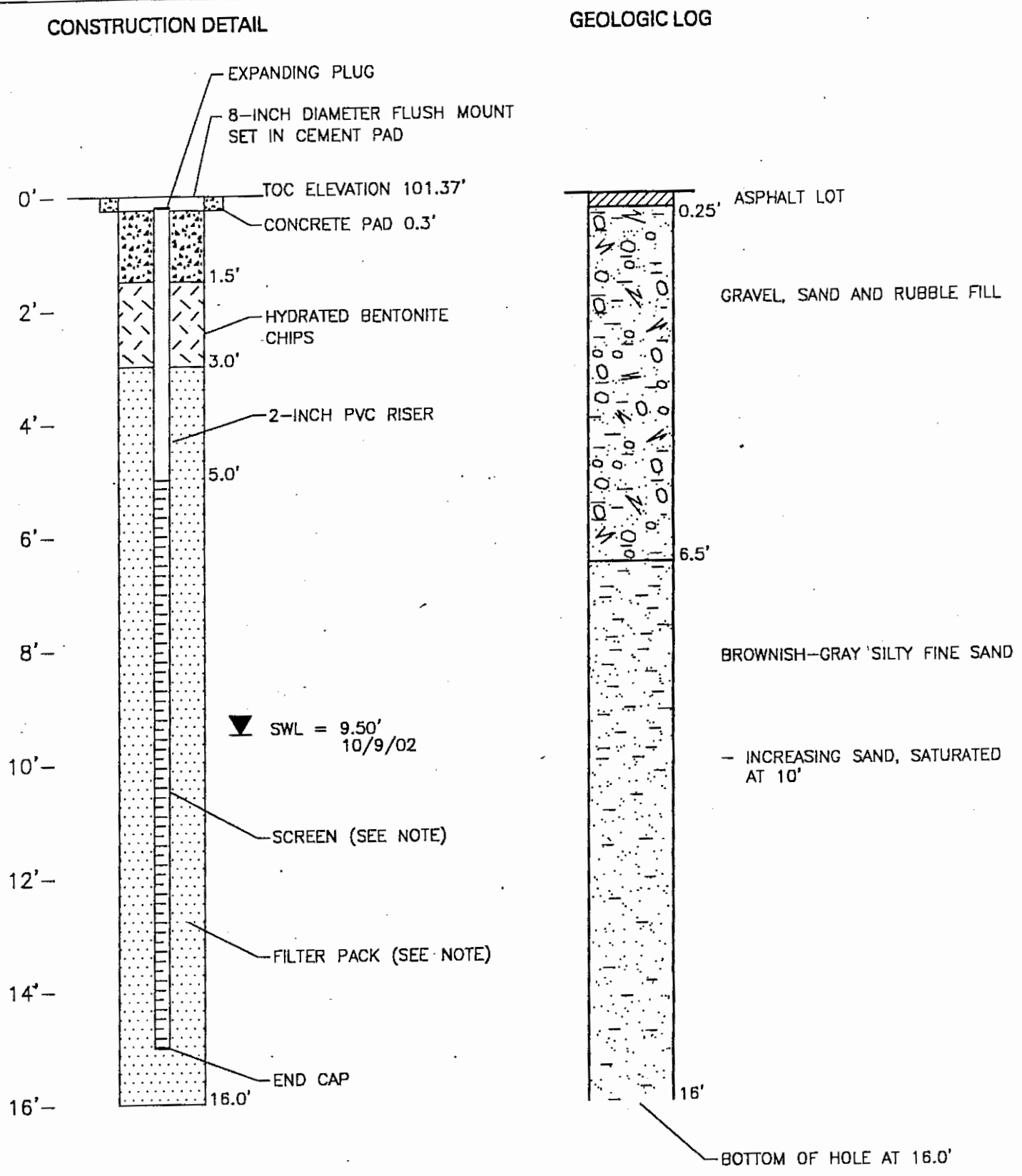
ELEVATION AT TOP OF CASING (TOC) RELATIVE TO SITE BENCHMARK

T 20 N/R 3 E - 11
PM: MFP
OCTOBER 2002

FIGURE 6

MONITORING WELL MW-5 CONSTRUCTION DETAIL AND GEOLOGIC LOG, FIFE CARDLOCK SITE

SALTBUSH ENVIRONMENTAL SERVICES, INC.



NOTES:

10 FEET OF SCREEN, 2–INCH DIAMETER, 20 SLOT (0.020–INCH OPENING) PVC.

FILTER PACK IS MONTEREY 2X12 PRODUCT

ELEVATION AT TOP OF CASING (TOC) RELATIVE TO SITE BENCHMARK

T 20 N/R 3 E - 11
PM: MFP
OCTOBER 2002
JOB NO. 6704M

FIGURE 7

MONITORING WELL MW-6 CONSTRUCTION DETAIL AND GEOLOGIC LOG, FIFE CARDLOCK SITE

SALTBUSH ENVIRONMENTAL SERVICES, INC.

Borehole/Well	Site and Job Number	Date:	Time:
BH-1	20th St. Fire 1677-2	10/7/02	9:10

Depth-Ft bgs	Water Table	Well Design	Description	Blows per 6"	Sample	Additional Notes (contamination)
						Logged 23.5-RID
			fill material to ~5' bgs. ↓			
5			5'-7' - greyish silt (dark) mod. sorted, organic odor, soft, moist	-	BH1-5-7	43 ppm, no gas odor
			7-9' - same material to 8.5' - sample collected 8.5-9' (odor) - lighter grey material.	-	BH1-7-9	215 ppm - gas odor
10	▽		Note: gw - raised ~1' after hole opened up, gw has slight sheen	-	BH1-W	N/A
	~~▽~~					
15						
20						

Saltbush Environmental Services, Inc.
805 Pacific Avenue
P.O. Box 505
Tacoma, WA 98401-0505
Tel. (253) 383-1914 Fax (253) 383-4525
Operations@Saltbush.com

Borehole/Well Log

Drill Method: Direct Push

Sample Method: ~~split spoon~~ sleeves

Bore Log - text box

Borehole/Well	Site and Job Number	Date:	Time:
BH-2	20th St. Fife 1477-2	10/7/02	10:43

Depth-Ft bgs	Water Table	Well Design	Description	Blows per 6"	Sample	Additional Notes (contamination)
			fill material (lots of cobbles) ↓			
5			5'-7' - same grey silty material, moist, strong odor (gas, grey), mod. saturated.	—	BH2 5'-7'	72 ppm odor
			7'-9' - grey silt w/ tan bands, gas odor, sheen noted in moist sections	—	BH2 7-9	45 ppm odor
10	▽		Note - after equilibration, depth was 10' bgs	—	BH2-W	N/A
15						
20						

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Tacoma, WA 98401-0505
Tel. (253) 383-1914 Fax (253) 383-4525
Operations@Saltbush.com

Borehole/Well Log

Drill Method: D.P.

Sample Method: sleeve

Borehole/Well	Site and Job Number	Date:	Time:
BH-4	20th St. E Fife 19772	10/7/02	12:40

Depth-Ft bgs	Water Table	Well Design	Description	Blows per 6"	Sample	Additional Notes (contamination)
5			↓ fill material - met refusal @ 6' bgs			
10	?					
15						
20						

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Borehole/Well Log

Drill Method: D.P

Sample Method:

Borehole/Well	Site and Job Number	Date: Time:
BH-5	20th STE - File 1477-2	10/7/02 1:00

Depth-Ft bgs	Water Table	Well Design	Description	Blows per 6"	Sample	Additional Notes (contamination)
			↑ fill ↓			
5			5'-7' - same grey silt as in prev. borings, damp, coarser material 5'-6' bgs		BHS 5-7	45.52 ppm no odor
			7'-9' - silty gravel to 8', 1' thick grey clayey silt layer, small amount of fine sand at depth.		BHS 7-9	32.35 ppm no odor
10	▽		BHS-W - slight sheen, no odor		BHS-W	
15						
20						

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Borehole/Well Log

Drill Method: D.P.

Sample Method: sleeve

Borehole/Well	Site and Job Number	Date:	Time:
BH-6	20th St, E 1477-2	10/7/02	3

Depth-Ft bgs	Water Table	Well Design	Description	Blows per 6"	Sample	Additional Notes (contamination)
						6.7 bl'gel
			↑ fill material to 4' ↓			
5			5'-7' - grey silt & fine sand, moist	BH6 5-7		23, no odor
			7'-9' - no odor, grey silt to 8.5' - then there is a 1/4" gray layer & 2"-3" of grey fine sand well sorted	BH6 7-9		13.2, no odor
10	▽		Note: sheen noted on GW..	BH6 -W		N/A
15						
20						

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Tacoma, WA 98401-0505
Tel. (253) 383-1914 Fax (253) 383-4525
Operations@Saltbush.com

Borehole/Well Log

Drill Method: D.P.

Sample Method: Sleeve

Bore Log - text box

Borehole/Well	Site and Job Number	Date: Time:
BH-7	20th. St. E 1977-2	10/7/02 —

Depth-Ft bgs	Water Table	Well Design	Description	Blows per 6"	Sample	Additional Notes (contamination)
			↑ fill material ↓			
5			5'-7' - met refusal @ 5.5' - 3:00 pm	BH7 5-7		
10	?					
15						
20						

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Operations@Saltbush.com

Borehole/Well Log

Drill Method:

Sample Method:

Borehole/Well	Site and Job Number	Date: Time:
BH-8	20th St. E 1477-2	10/7/02

Depth-Ft bgs	Water Table	Well Design	Description	Blows per 6"	Sample	Additional Notes (contamination)
5			↓ fill			
10	▼		GW	[illegible]	BH8 W	
15						
20						

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Tacoma, WA 98401-0505
Tel. (253) 383-1914 Fax (253) 383-4525
Operations@Saltbush.com

Borehole/Well Log

Drill Method: D.P.

Sample Method: parasdelfie.

Borehole/Well	Site and Job Number	Date: Time:
BH9	20th St. E 1477-2	10/7/02 -

Depth-Ft bgs	Water Table	Well Design	Description	Blows per 6"	Sample	Additional Notes (contamination)
5						
10	▼		straight auto gw sample, gw had sheen & small splotches of gas	BH9-W		
15						
20						

Saltbush Environmental Services, Inc.
805 Pacific Avenue
P.O. Box 505
Tacoma, WA 98401-0505
Tel. (253) 383-1914 Fax (253) 383-4525
Operations@Saltbush.com

Borehole/Well Log

Drill Method: D.P.

Sample Method: paradoltiz.