FILE NAME: Tillamook Creamery LOG NO. 29 - 08 - 0695

NWR'S NFA TRACKING CHECKLIST

ROUTE TO	ACTIVITY	RESPONSIBLE PERSON	DATE COMPLETED
Jeff	UST database checked by Project Manager (PM) to make sure fees paid and tanks closed and verify w/ Greg UST compliance issues have been resolved	J. Schatz	11-4-09
Jeff	OTIS updated with soil disposal, public notice, site status in comments not file status field and other applicable information by PM	J. Schatz	11-4-09
Jeff	Draft NFA prepared by PM and submitted to NRS-4 Hydro or Manager for review	J Schatz	11-5-09
Bill Robertson Mike Kortenhof	Draft NFA approved by NRS-4 Hydro (or Manager, if necessary) and submitted for data entry	Bill Robertson MK	11-18-09 11/23/09
Lynne	Draft attached to file to Lynne for proofreading letter	LK	12/7/09
Lynne	Verify staff completed cost recovery entry - LUST and green sheet updated with final invoice request date	LK	12/7/09
	OPTIONAL STEP: Expedited payment request by responsible party (RP) is handled by =======>> **LYNNE**		
	OPTIONAL STEP: Estimated Expedited Payment Amount given to RP by =======>> **LYNNE**		
Lynne	Final invoice paid notice received from Business Office; PM informed by **LK**; verify SITE TYPE/STATUS is updated and correct	LK	2-8-10
Jeff	Final NFA drafted and signed by PM (and Manager, if necessary) and send for data entry	JCS	2-8-10
Lynne	LUST updated with file closed information and file closure activities complete	LK	4/12/10
Dietra	Copies made (including copy of NFA, EES, enclosures, attachments, if applicable, and release form for NFA binders) and mailed.	PC	2-11-10
Lynne	Upload scanned copy to LUST	LK	4/12/10

Review Type: NEW | DEQ Office: NWR | First | Last | 1 of 3 Records | Next | Back

OLPRR Review

Incident Comments | Contractor Maintenance

OLPRR# 11629

Incident Data

Reported By: ERIK RD CHAPMAN RG
RepBy Phone: 503-570-9484 X 14
Company: BERGESON-BOESE & ASSOCIATES

Lookup LUST

Log Number: 29-08-0695
Site Type: UnRegulated
Site Name: Tillamook Creamery
Received Date: 6/11/2008
Site Address: 4185 Highway 101 N
Other:
City: Tillamook
Zip Code: 97141

County: Tillamook
Facility Id: 3696 Lookup UST
Phone:

Responsible Party

First Name: Shawn
Last Name: Reiersgaard
Organization: Tillamook Creamery
Address: PO Box 313
Address2:
City: Tillamook
State: OR Zip Code: 97141
Phone: 503-815-1338
E-Mail: sreiersgaard@tillamookcheese.com

Mail Contacts

Invoice Contact

First Name: Shawn
Last Name: Reiersgaard
Organization: Tillamook Creamery
Address: PO Box 313
Address2:
City: Tillamook
State: OR Zip Code: 97141
Phone: 503-815-1338
E-Mail: sreiersgaard@tillamookcheese.com

Site Assessment

Discover Date: 4/1/2008
Discovery: Decommissioning
Cause: Physical/Mechanical Damage
Source: Tank
Confirmation: Contractor

Contaminants

- [ ] Heating Oil
- [ ] Waste Oil
- [ ] Other Pet. Dist.
- [ ] Leaded Gasoline
- [ ] Unleaded Gasoline
- [ ] Chemical
- [x] Misc. Gasoline
- [ ] Lubricant
- [ ] MTBE
- [ ] Diesel (Motor Fuel)
- [ ] Solvent
- [ ] Unknown

Impacted Media

- [x] Groundwater
- [ ] Surface Water
- [ ] Drinking Water
- [ ] Free Product
- [ ] Vapor
- [ ] Soil

Accept | Hold | Decline | Close

Q-Time # 40561
Fin Inv Rev 12/8/09
ck

File

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
Fax: (503) 229-6945
TTY: (503) 229-5471

09 February 2010

SHAWN REIERSGAARD
TILLAMOOK CREAMERY
PO BOX 313
TILLAMOOK OR 97141

Re: Tillamook Creamery
File No. 29-08-0695

Dear Mr. Reiersgaard:

The Department of Environmental Quality (DEQ) has completed its review of the information submitted to date, regarding the underground storage tank (UST) investigation and cleanup conducted at 4185 Highway 101 North in Tillamook, Tillamook County, Oregon (site). DEQ has determined that the cleanup appears to have met the requirements of Oregon Administrative Rules (OAR) 340-122-0205 through 340-122-0360 and that no further action is required at this time subject to any conditions described below. The site was evaluated using risk-based screening levels for occupational worker, construction worker, and excavation worker exposure scenarios.

This determination is a result of our evaluation and judgment based on the regulations and facts as we now understand them:

SITE HISTORY/BACKGROUND

In March 2008, utility workers installing a new 8-inch water main near the southeast entrance to the Tillamook Creamery encountered a 500-gallon UST. The tank, located approximately 25 feet east of the 2000 UST excavation, was decommissioned by removal. Confirmatory samples were collected from the excavation floor, excavation sidewalls at the soil-water interface, and from standing water in the pit. No detections above laboratory method reporting limits (MRLs) were reported in either of the samples collected from the excavation sidewalls. A soil sample collected from the floor of the excavation (beneath the standing water) at a depth of 7.5 feet below ground surface (bgs) exhibited benzene exceeding laboratory reporting limits. Laboratory analysis of the pit water sample revealed Total Petroleum Hydrocarbons as Gasoline (TPH-G) and constituents at concentrations exceeding generic Risk-Based Concentration (RBC) standards for one or more exposure pathways. On June 11, 2008, a release of petroleum hydrocarbons was reported to DEQ and File No. 29-08-0695 was established.

The site is located along the southern boundary of the current Tillamook Creamery property near its southeast entrance from Latimer Road. More specifically, the site is located between the

facility fence line and the southern property boundary. The Bay Breeze Golf Course is located south of the site beyond Latimer Road. According to Section 3.032 of the Tillamook County Land Use Ordinance, the site is zoned General Industrial (M-1). County zoning regulations provide only limited potential for future residential use and long-term commercial use of the site is anticipated.

UST DECOMMISSIONING

In July 2000, a 675-gallon gasoline UST was discovered near the southern boundary of the Tillamook Creamery property. In November 2000, the UST was decommissioned in-place. Preliminary characterization revealed that TPH-G and benzene were present in site soil and groundwater in the area of the decommissioned UST. Between September 2000 and May 2001, four monitoring wells (MW-1 through MW-4) were installed around the perimeter of the decommissioned UST and quarterly monitoring was completed. On August 20, 2002, following completion of quarterly compliance monitoring and a Conceptual Site Model (CSM), DEQ issued a No Further Action (NFA) determination for File No. 29-00-0859.

In March 2008, utility workers installing a new 8-inch water main near the southeast entrance to the Tillamook Creamery encountered a 500-gallon UST. The tank, located approximately 25 feet east of the 2000 UST excavation, was decommissioned by removal. Confirmatory samples were collected from the excavation floor, excavation sidewalls at the soil-water interface, and from standing water in the pit. Two soil samples collected from the excavation sidewalls adjacent to the eastern and western ends of the UST were analyzed using Method NWTPH-HCID and for benzene, toluene, ethylbenzene, and total xylenes (BTEX). No detections above laboratory MRLs were reported in either of the samples. A soil sample collected from the floor of the excavation (beneath the standing water) at a depth of 7.5 feet bgs exhibited benzene at a concentration of 0.110 milligrams per kilogram (mg/kg). Laboratory analysis of the pit water sample revealed TPH-G [31,000 micrograms per liter (µg/L)], benzene (2,700 µg/L), toluene (5,460 µg/L), ethylbenzene (736 µg/L), and total xylenes (3,520 µg/L) at concentrations exceeding generic RBC standards for one or more exposure pathways.

EXTENT OF CONTAMINATION DEFINED

In April 2008, Bergeson-Boese & Associates, Inc. (BB&A) performed a supplementary investigation to further characterize petroleum hydrocarbons impacts identified during the March 2008 investigation. Five soil borings (P1 through P5) were advanced to evaluate soil impacts near the 2008 UST excavation. A secondary objective of the investigation was to further delineate the lateral extent of historic contamination associated with the 2000 UST release (File No. 29-08-0859). The soil samples collected from boring P2, advanced approximately between

the 2000 and 2008 UST excavations, exhibited TPH-G at concentrations ranging from 53.6 to 590 mg/kg and benzene at concentrations ranging from 0.187 to 2.35 mg/kg. Benzene concentrations exceeding the occupational vapor intrusion RBC (1.2 mg/kg) were detected in soil samples collected from boring P2 at depths of 4.5 and 15.5 feet bgs. Soil samples collected from borings advanced south of the 2008 UST excavation (P5) and west and southwest of the 2000 UST excavation (P3 and P4, respectively) did not exhibit detectable concentrations of TPH-G and BTEX.

During the April 2008 supplemental investigation, grab groundwater samples were collected from borings P1 through P5. Groundwater samples collected from borings P1 and P3 did not exhibit TPH-G or Risk-Based Decision Making (RBDM) volatile organic compounds (VOCs) above laboratory MRLs. The grab groundwater samples collected from boring P2 (between the 2008 and 2000 UST excavations) exhibited the following constituents at concentrations above the most stringent of generic RBC standards: TPH-G (8,830 µg/L), ethylbenzene (290 µg/L), total xylenes (360 µg/L), and 1,2,4-trimethylbenzene (748 µg/L). The groundwater sample collected from boring P5 (down-gradient of boring P2 and the March 2008 pit water sample) exhibited low levels of TPH-G (562 µg/L), benzene (50.1 µg/L), and other RBDM constituents. Because boring P5 was advanced south of the Tillamook Creamery property boundary, BB&A recommended additional investigation on the south side of Latimer Road.

In August 2008, BB&A conducted an additional investigation to complete delineation of contamination identified in the area of April 2008 boring P2. One additional boring (P6) was advanced on the south side of Latimer Road, roughly south-southeast of boring P5. A grab groundwater sample collected from boring P6 did not exhibit concentrations of TPH-G or RBDM VOCs exceeding laboratory MRLs.

The report documenting the April 2008 site assessment activities incorporated a CSM and risk-based evaluation. As noted previously, current and likely future occupational worker, construction worker, and excavation worker exposure scenarios were identified. The *Volatilization to Outdoor Air* pathways for soil and groundwater, as well as the *Groundwater in Excavation* pathway for groundwater, were determined to be complete. In addition, although the *Soil Ingestion, Dermal Contact, and Inhalation* pathway was found to be incomplete under current or likely future occupational worker use scenarios, this pathway could not be ruled out under current and likely future construction worker and excavation worker scenarios. Based on a lack of commercial structures within 10 lateral feet of the 2008 and 2000 UST excavations, the *Vapor Intrusion into Building* exposure pathways for soil and groundwater were found to be incomplete. Likewise, following completion of a Beneficial Water Use Determination (BWUD), the *Soil Leaching to Groundwater* and *Groundwater Ingestion and Inhalation from Tapwater* exposure pathways were determined to be incomplete.

Using data collected from the April 2008 and August 2008 investigations, BB&A estimated that impacted groundwater did not extend appreciably south of the Tillamook Creamery property line.

REMEDIAL ACTIONS AND COMPLIANCE MONITORING/SAMPLING

Based on analytical data obtained from grab samples collected in the vicinity of the 2008 UST excavation, installation of permanent monitoring wells was not deemed necessary by DEQ.

Between September 2000 and December 2001, compliance monitoring completed in association with the 2000 release was completed on a quarterly basis. Static water levels ranged from 1.92 to 7.59 feet below the top of the well casings. Analytical data for monitoring wells MW-1 through MW-3 indicated gasoline constituents were not present at concentrations above applicable RBC standards. Only groundwater samples from monitoring well MW-4 exhibited gasoline constituents at concentrations exceeding laboratory MRLs (but below RBC standards in effect at the time). Groundwater flow to the southwest, south-southwest, and south-southeast was documented during this period. The 2000 and 2001 compliance monitoring demonstrated that impacted groundwater did not extend appreciably beyond the 2000 UST excavation.

CURRENT AND FUTURE GROUNDWATER BENEFICIAL USE DETERMINATION

Drinking water in the area of the site is obtained from two 12-inch water wells located approximately 3 miles northeast of the site. The water wells, owned by the Kilchis Water District, produce groundwater from depths of approximately 50 to 60 feet bgs.

A search of Oregon Water Resources Department (WRD) records for the area within a 0.25-mile radius of the site was completed. A total of three water wells were identified within the search radius. TILL 478 is a 6-inch domestic use water well on the Tillamook Creamery property. The well is reportedly located approximately 750 feet north-northwest (up-gradient) of the former UST excavation. Completed to a depth of 85 feet bgs, the well is not currently in use because the facility obtains municipal drinking water from the Kilchis Water District. Mr. Shawn Reiersgaard of the Tillamook Creamery confirmed there are no future plans to utilize this well as a source of drinking water.

TILL 50600 is a 6-inch irrigation well located on the Bay Breeze Golf Course property, approximately 550 feet southwest of the former UST excavation. Review of the WRD well log indicates this well was registered for repair and/or reconditioning in 1999. Following repair efforts, the well was labeled as "unusable". When contacted by BB&A, Mr. Mike Lehman (owner of Bay Breeze Golf Course) reported this well was taken out of service due to low yield

and high suspended solid content. Based on these factors, Bay Breeze Golf Course reportedly has no future plans to return the well to service.

TILL 477 is a 6-inch domestic use well located on the west side of Highway 101 (west of site) and lies just within the 0.25-mile search radius. This well produces from a depth of approximately 98 feet bgs. Based on historic groundwater elevation data, this well is located cross-gradient to the former UST excavations and is not likely to be impacted by site groundwater.

Due to the limited aerial extent of groundwater contamination and location of water well receptors relative to the site, shallow groundwater is not considered to have a current or future likely beneficial use as drinking water.

CURRENT AND FUTURE LAND USE DETERMINATION

The site is currently utilized for commercial creamery operations. According to the Tillamook County Land Use Ordinance, General Industrial (M-1) zoning allows a number of industrial and commercial property uses. Outright permitted uses of a residential nature are limited, consisting only of dwellings for caretakers or watchmen that are necessary to an established commercial or industrial use. Site zoning allows conditionally permitted uses including motels associated with convention facilities, schools, and correctional facilities. Based on the current and reasonably likely future use, there is a high probability for long-term commercial use of the site. As a result, site conditions were evaluated for occupational worker, construction worker, and excavation worker exposure scenarios.

CONTAMINANTS OF INTEREST (COIs)

The primary driver of cleanup activities at the site is TPH-G. Associated COIs at the site include BTEX, 1,2,4-trimethylbenzene (1,2,4-TMB), 1,3,5-trimethylbenzene (1,3,5-TMB), iso-propylbenzene, n-propylbenzene, naphthalene, methyl tert butyl ether, 1,2-dibromoethane, 1,2-dichloroethane, and lead. The above-listed petroleum constituents are volatile and semi-volatile components of total petroleum hydrocarbons that DEQ evaluates to determine any potential risks to human or ecological receptors.

A lesser driver of cleanup activities at the site is diesel-range petroleum hydrocarbons. Associated contaminants of interest include BTEX and polynuclear aromatic hydrocarbons (PAHs) including acenapthene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, and pyrene.

CONTAMINANTS OF POTENTIAL CONCERN (COPCs)

In historic subsurface investigations conducted in 2008, the following COPCs were detected in site media: TPH-G, BTEX, naphthalene, n-propylbenzene, iso-propylbenzene, 1,2,4-TMB, and 1,3,5-TMB. Although TPH-D was not detected at concentrations exceeding laboratory MRLs using Method NWTPH-HCID, PAHs including acenaphthene, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenenthrene, and pyrene were also detected in site groundwater.

CONCEPTUAL SITE MODEL AND RISK-BASED DETERMINATION

Based on zoning regulations, the following current and likely future receptor scenarios were evaluated for this release: occupational worker, construction worker, and excavation worker. Exposure pathways were evaluated in conjunction with the above-listed receptor scenarios to determine if they were complete:

Soil Ingestion, Dermal Contact, and Inhalation

Analytical data indicate soil impacted by petroleum hydrocarbons is restricted to the vicinity of boring P-2 and the 2008 UST excavation at depths exceeding 3 feet bgs. As a result, DEQ considers this exposure pathway to be incomplete under current and likely future occupational worker exposure scenarios. However, impacted soil has been documented at depths ranging from 4.5 to 15.5 feet bgs, which is within the reasonably likely completion depths of future site excavations. Therefore, DEQ considers this exposure pathway complete under current and likely future construction worker and excavation worker exposure scenarios.

Soil Volatilization to Outdoor Air

Historic investigations have revealed that soil impacted with petroleum hydrocarbons and/or associated constituents are seasonally near or above the high groundwater table. DEQ considers this exposure pathway complete under current and likely future occupational worker exposure scenarios.

Soil Vapor Intrusion into Buildings

Recent investigations have revealed that soil impacted with TPH-G and associated constituents (benzene in particular) are present in the area of the 2000 and 2008 UST excavations (extreme southern portion of the property). No commercial structures are currently located within 10

lateral feet of impacted soil. In addition, the area of impacted soil is located south of the facility fence line, and as a result, is unlikely to lie within the footprint of future buildings associated with creamery operations. For these reasons, DEQ considers this exposure pathway incomplete under current and likely future occupational worker exposure scenarios.

Soil Leaching to Groundwater

This exposure pathway should be evaluated when petroleum hydrocarbons and/or constituents are present in vadose zone soil and/or groundwater has a current or likely future beneficial use as drinking water. A BWUD completed for the site concluded that the facility is connected to municipal water and shallow groundwater in the Locality of the Facility (LOF) does not have a current or likely future beneficial use as drinking water. Therefore, this exposure pathway is considered incomplete under current and likely future occupational worker exposure scenarios.

Groundwater Ingestion & Inhalation from Tapwater

This exposure pathway should be evaluated when petroleum hydrocarbons and/or constituents have been detected in groundwater with a current or likely future beneficial use as drinking water. Because a BWUD completed for the site revealed shallow groundwater in the LOF had no current or likely future beneficial uses, DEQ considers this exposure pathway incomplete under current and likely future occupational worker exposure scenarios.

Groundwater Volatilization to Outdoor Air

Site assessment and compliance groundwater monitoring activities have revealed petroleum hydrocarbons and associated constituents in shallow groundwater, most notably in the vicinity of the 2008 UST excavation. DEQ considers this pathway complete under current and likely future occupational worker exposure scenarios.

Groundwater Vapor Intrusion into Buildings

Site assessment activities have revealed that groundwater impacted with TPH-G and associated constituents is restricted to the extreme southern portion of the property in the vicinity of the 2008 UST excavation. Commercial buildings associated with creamery operation are not currently located within 10 lateral feet of impacted groundwater. Based on the location of the former UST excavations relative to the southern property boundary, it is unlikely that future commercial buildings will be constructed in this area. DEQ considers this pathway incomplete under current and likely future occupational worker exposure scenarios.

Groundwater in Excavation

This exposure pathway should be considered where impacted groundwater has been discovered at depths likely to intersect excavations associated with routine maintenance or site development. Based on historic groundwater analytical data, groundwater is present at approximate depths ranging from 2 to 8 feet below the top of the former well casings. Because this is in the depth range of likely future excavations, this exposure pathway is considered complete under current and likely future construction worker and excavation worker exposure scenarios.

CONTAMINANTS OF CONCERN (COCs)

Detected concentrations of petroleum hydrocarbons and associated constituents in soil and groundwater were compared to generic RBC standards for complete exposure pathways to identify COCs. Detections were screened against RBC standards for relevant exposure pathways under occupational worker, construction worker, and excavation worker exposure scenarios.

Benzene at concentrations exceeding 1.2 mg/kg (generic RBC standard for the *Soil Vapor Intrusion into Building* exposure pathway under occupational worker scenarios) were detected in soil samples collected from boring P-2 at depths of 4.5 feet bgs (2.35 mg/kg) and 15.5 feet bgs (1.28 mg/kg). Boring P-2 is located near the southern boundary of the Tillamook Creamery property (south of facility fence line) and is not currently located within 10 lateral feet of commercial buildings. In addition, based on this location, it is extremely unlikely that future commercial-use buildings will be constructed in this area. Therefore, benzene-impacted soil in the area of boring P-2 is not likely to pose risks to current or likely future occupational worker receptors. This exposure pathway was previously demonstrated to be incomplete.

Based on screening of analytical data obtained from the 2008 UST excavation and soil borings P-1 through P-6 against generic RBC standards for applicable exposure pathways, the following COCs were identified for site groundwater:

TPH-G at a concentration of 31,000 µg/L was detected in the pit water sample collected from the 2008 UST excavation. This concentration exceeded the generic RBC standard for the *Groundwater in Excavation* exposure pathway under construction worker and excavation worker exposure scenarios (12,000 µg/L).

Benzene at a concentration of 2,700 µg/L was detected in the pit water sample from the 2008 UST excavation. This concentration exceeds the generic RBC standard for the *Groundwater in Excavation* exposure pathway under construction worker and excavation worker exposure scenarios (1,700 µg/L). Although this concentration also exactly equals the generic RBC for the

Groundwater Vapor Intrusion into Building exposure pathway under occupational worker exposure scenarios, this pathway has been previously demonstrated to be incomplete.

In summary, TPH-G and benzene were detected in groundwater in the immediate vicinity of the 2008 UST excavation at concentrations exceeding the RBC standards for the *Groundwater in Excavation* exposure pathway. Pit water samples collected from UST excavations are not typically considered to be representative of actual groundwater conditions. Analytical data for groundwater samples collected from borings P-1 through P-6 confirm that levels of TPH-G and constituents in groundwater beyond the immediate vicinity of the former excavation do not exceed RBC standards for applicable exposure pathways. This data also demonstrates that impacted groundwater does not extend appreciably beyond the limits of the former excavation. As a result of these factors, detections of TPH-G and benzene in the 2008 UST pit water sample are not believed to pose unacceptable risks to current and likely future construction and excavation worker receptors.

Measures to mitigate potential risks from contaminated media are proposed in the following section.

RISK MANAGEMENT

As noted previously, site conditions were evaluated under occupational worker, construction worker, and excavation worker receptor scenarios. Soil and groundwater beneath the site is impacted by petroleum hydrocarbons and selected constituents, but at concentrations not exceeding RBC standards for complete exposure pathways. Based on this finding, this conditional NFA determination assumes the following:

- No use shall be made of shallow groundwater at the site, by extraction through wells or by other means involving consumption or non-consumptive use of the groundwater. This prohibition shall not apply to extraction of groundwater associated with temporary dewatering activities related to the installation of sewers or utilities at the property. A risk assessment must be conducted and submitted to DEQ for review and approval prior to extraction of any shallow groundwater for uses other than those excluded above.

- The site will be utilized for long-term commercial use associated with operations at the Tillamook Creamery facility.

- Future development for residential and/or urban residential uses is prohibited within 50 feet of residual soil and groundwater contamination unless further evaluation is

performed and it is shown that remaining contaminant concentrations are below RBC standards for complete exposure pathways.

ECOLOGICAL RISK EVALUATION

An unnamed tributary of the Wilson River is located approximately 600 feet south of the site. Because it has been shown that groundwater contamination does not extend south of Latimer Road, site conditions are not believed to pose unacceptable risks to ecological receptors.

PUBLIC NOTICE

In a letter dated July 31, 2009, DEQ attempted to solicit comments concerning the BB&A request for NFA status from the Tillamook County Public Works Department and the owner of the adjacent property south of the site. No comments concerning the proposed closure were received by DEQ. DEQ attempted to solicit comments concerning the proposed closure from the following parties:

Property	Owner
Latimer Road (right-of-way south of site)	Leann Welch, Director Tillamook County Public Works Department 503 Marolf Loop Road Tillamook, OR 97141
Bay Breeze Golf Course and Range	Mike and Peggy Lehman 2325 Latimer Road Tillamook, OR 97141

NFA DETERMINATION

Contamination remains at the site. DEQ approves leaving this contamination because it does not present an unacceptable risk to human health, safety, welfare or the environment provided the conditions listed in the section entitled "Risk Management", are implemented. DEQ's approval to leave contamination on the site was based upon present conditions, as described in documents in DEQ's files.

Any future work in the contaminated areas of the property, including any sampling, management, and disposal of contaminated soil and groundwater must be performed in accordance with DEQ regulations and policies.

DEQ recommends that monitoring wells be properly decommissioned, since construction deficiencies can develop in monitoring wells, thereby creating a liability and a possible conduit for contaminant migration. Monitoring wells that are not maintained according to Oregon WRD standards must either be repaired or decommissioned in accordance with Oregon WRD regulations. Please coordinate with an Oregon WRD Regional Well Inspector regarding proper abandonment procedures and submit a copy of any monitoring well decommissioning reports to DEQ.

This determination will not apply if new or undisclosed facts show that the cleanup does not comply with the referenced rules. Specifically, this letter only applies to the UST release discussed above (unless otherwise noted) and does not apply to contamination that may have originated from Underground Injection Control systems (UICs), i.e. motor vehicle drains, septic systems, drain fields, cesspools, seepage pits, drywells, seepage trenches, and abandoned wells. It also does not apply to former pump islands or UST locations, hydraulic hoists, or other sources of contamination not addressed by this letter. If this facility has unregistered UICs you must register them with the DEQ and obtain from DEQ either Rule Authorization or a permit to operate the UIC. Please visit DEQ's website at www.deq.state.or.us/wq/groundwa/uichome.htm or call (503) 229-5945 for more information.

DEQ recommends keeping a copy of all of the documentation associated with this remedial action with the permanent facility records.

Your efforts to comply with the regulations to ensure that your facility has been adequately cleaned up have been appreciated. If you have any questions, please contact me at (503) 229-5024 or the DEQ's Northwest Region office at (503) 229-5263.

Respectfully,

Jeff K. Schatz, R.G.
UST Cleanup Project Manager
Underground Storage Tank Section

Michael H. Kortenhof, Manager
UST Section and Hazardous Waste Compliance

cc: NWR Monitoring Well Inspector
Oregon Water Resources Dept.
725 Summer St. NE, Suite. A
Salem, OR 97301-1270

Erik R.D. Chapman, R.G.
Bergeson-Boese & Associates, Inc.
25195 SW Parkway Avenue, Suite 207
Wilsonville, OR 97070

(jks:JKS)

State of Oregon
Department of Environmental Quality Memorandum

Date: November 18, 2009

To: **Jeff Schatz, NWR – Portland**

From: **Bill Robertson, NWR – Portland** **DRAFT**

Subject: **No Further Action (NFA) Determination**
Tillamook Creamery
4185 Hwy 101 N
Tillamook, OR 97141
DEQ File No. 29-08-0695

cc: **Mike Kortenhof, Manager**
UST Section and Hazardous Waste Compliance

I concur with issuance of an NFA for the Tillamook Creamery site. I am providing you with the following comments:

Following our meeting on June 24, 2009 I provided you with the following comments via email.

"Although a limited amount of work was done at the site, at least a few of the borings appear to be appropriately located near the axis of the groundwater flow direction. This would provide us an indication whether there is significant residual contamination. The outer boring was ND, so there isn't any indication of a significant spread of contamination to the adjacent property. A little contamination likely reaches under the street, but not at a concentration above the construction/excavation worker exposure scenario. The area is underlain with fine-grained sediments, which will minimize the spread of any residual contamination. Available information indicates groundwater ingestion is not a complete exposure pathway and none of the detected concentrations from the borings exceed any other generic RBCs.

Based upon our discussion and my limited review, I would support issuing an NFA for the release from the second tank discovered at the site."

- The source of the release is approximately 5 gallons of gasoline, which was released when a recently discovered underground storage tank was punctured during decommissioning.

- Wetlands, streams, ponds and other surface water bodies were not identified adjacent to the site. The nearest surface water is approximately 600 feet south of the site, an unnamed tributary to the Wilson River. Ecological exposure risks are unlikely.

- A public notice was issued for the proposed NFA. No comments were received.

file

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
Fax: (503) 229-6945
TTY: (503) 229-5471

Certified Mail
Return Receipt Requested
7005-0390-0005-5460-8985
7009-0080-0000-4707-5074

31 July 2009

LEANN WELCH, DIRECTOR
TILLAMOOK COUNTY PUBLIC WORKS DEPARTMENT
503 MAROLF LOOP ROAD
TILLAMOOK OR 97141

MIKE AND PEGGY LEHMAN
BAY BREEZE GOLF & RANGE
2325 LATIMER ROAD
TILLAMOOK OR 97141

Re: Solicitation of Comment
Tillamook Creamery
File No. 29-08-0695

To Whom It May Concern:

The purpose of this letter is to inform you of the results of environmental investigations performed at the Tillamook Creamery facility located at 4185 Highway 101 North in Tillamook, Tillamook County, Oregon (hereafter referred to as the site). Bergeson-Boese & Associates, Inc. (BB&A) on behalf of Tillamook Creamery Association has requested closure of File No. 29-08-0695 and issuance of a No Further Action (NFA) determination. The Department of Environmental Quality (DEQ) wishes to solicit comments concerning the proposed closure of this release incident under the Risk-Based Decision Making (RBDM) rules.

Reports entitled *Investigation for Magnitude and Extent of Contamination, and Conceptual Site Model* (July 29, 2008), *Addendum Letter: Supplemental Investigation of the Magnitude and Extent of Contamination* (September 23, 2008) and *Response to Telephone Inquiry* (May 14, 2009) were prepared by BB&A on behalf of Truax. The referenced documents describe the site's history, the results of historic environmental investigations, and cleanup actions performed at the site. The documents additionally provide an analysis of potential exposure pathways by which human receptors could be exposed to residual contamination left at the site or on nearby properties. Figures taken from one or more of the above-referenced documents are herein provided as Attachments to this letter.

Soil and groundwater analytical data collected during historic site investigations indicate low levels of residual petroleum hydrocarbon contamination are present along the southern boundary of the site and adjacent to or beneath the Latimer Road right-of-way. At the same time, it has been shown that impacted groundwater does not extend onto the adjacent Bay Breeze Golf Course property. DEQ wishes to solicit comments concerning historic investigation and/or remediation activities on properties that are known or suspected to have been impacted by petroleum-contaminated soil or groundwater from an underground storage tank (UST) release at the site. DEQ additionally seeks comments from the owners of unimpacted properties in close proximity to the site.

A summary of relevant cleanup and investigation activities conducted for this release is provided below.

SUMMARY OF RELEVANT SITE INVESTIGATIONS, 2000-2008

In July 2000, a 675-gallon gasoline UST was discovered along the southern boundary of the Tillamook Creamery property. In November 2000, the UST was decommissioned in-place and File No. 29-00-0859 was assigned to the release. Preliminary characterization revealed that Total Petroleum Hydrocarbons (TPH-G) and benzene at concentrations up to 720 mg/kg and 0.514 milligrams per kilogram (mg/kg), respectively, were present in site soil. A grab groundwater sample from a boring advanced near the southwest corner of the UST detected benzene at a concentration of 110 micrograms per liter (µg/L). Between September 2000 and May 2001, four monitoring wells (MW-1 through MW-4) were installed around the perimeter of the decommissioned UST to evaluate groundwater conditions.

Between September 2000 and May 2001, quarterly monitoring activities were conducted at the site. Groundwater flow primarily to the south-southeast was documented. The groundwater monitoring program further revealed that impacts were limited to the vicinity of the abandoned UST. A Conceptual Site Model was completed to reveal current and likely future routes of exposure to site contaminants. Based on these findings, on August 20, 2002, DEQ issued an NFA determination for File No. 29-00-0859.

In March 2008, utility workers installing a new 8-inch water main near the southeast entrance to the Tillamook Creamery encountered a 500-gallon UST. The tank, located approximately 25 feet east of the 2000 UST excavation, was decommissioned by removal. Confirmatory samples were collected from the excavation floor, excavation sidewalls (at the soil-water interface), and from standing water in the pit. Two soil samples collected from the excavation sidewalls adjacent to the eastern and western ends of the UST were analyzed using Method NWTPH-HCID and for benzene, toluene, ethylbenzene, and total xylenes (BTEX). No detections above

laboratory method reporting limits (MRLs) were reported in either of the samples. A soil sample collected from the floor of the excavation (beneath the standing water) at a depth of 7.5 feet below ground surface (bgs) exhibited benzene at a concentration of 0.110 mg/kg. Laboratory analysis of the pit water sample revealed TPH-G (31,000 µg/L), benzene (2,700 µg/L), toluene (5,460 µg/L), ethylbenzene (736 µg/L), and total xylenes (3,520 µg/L), all at concentrations exceeding generic Risk-Based Concentration (RBC) standards for one or more exposure pathways.

In April 2008, BB&A performed a supplementary investigation to further characterize petroleum hydrocarbons impacts identified during the March 2008 investigation. Five soil borings (P1 through P5) were advanced to evaluate soil impacts near the 2008 UST excavation. A secondary objective of the investigation was to further delineate the lateral extent of historic contamination associated with the 2000 UST release (File No. 29-08-0859). The soil samples collected from boring P2, advanced between the 2000 and 2008 UST excavations, exhibited TPH-G at concentrations ranging from 53.6 to 590 mg/kg and benzene at concentrations ranging from 0.187 to 2.35 mg/kg. Benzene concentrations exceeding the occupational vapor intrusion RBC (1.2 mg/kg) were detected in soil samples collected from boring P2 at depths of 4.5 and 15.5 feet bgs. Soil samples collected from borings advanced south of the 2008 UST excavation (P5) and west and southwest of the 2000 UST excavation (P3 and P4, respectively) did not contain detectable concentrations of TPH-G and BTEX (Figure 4 of Attachments). Soil samples were not collected from boring P1, which was advanced northeast of the 2008 UST excavation.

During the April 2008 supplemental investigation, groundwater samples were collected from borings P1 through P5 using dedicated sections of 1-inch PVC casing. Groundwater samples collected from borings P1 and P3 did not exhibit TPH-G or RBDM volatile organic compounds (VOCs) above laboratory MRLs. The grab groundwater samples collected from boring P2 (between 2008 and 2000 excavations) exhibited the following constituents at concentrations above one or more generic RBC standards: TPH-G (8,830 µg/L), ethylbenzene (290 µg/L), total xylenes (360 µg/L), and 1,2,4-trimethylbenzene (748 µg/L). The groundwater sample collected from boring P5 (down-gradient of boring P2 and the March 2008 pit water sample) exhibited TPH-G (562 µg/L), benzene (50.1 µg/L), and low levels of other RBDM constituents (Figure 1 of Attachments). Because boring P5 was advanced south of the Tillamook Creamery property boundary, BB&A recommended additional investigation on the south side of Latimer Road. The investigation report incorporated a Conceptual Site Model and Beneficial Water Use Determination, in compliance with requirements for closure under the RBDM rules. BB&A concluded groundwater in the area of the site did not have a current or likely future beneficial use as drinking water.

In August 2008, BB&A conducted an additional investigation to complete the delineation of

contamination identified in the area of April 2008 boring P2. One additional boring (P6) was advanced on the south side of Latimer Road, south-southeast of boring P5. A grab groundwater sample collected from boring P6 did not contain concentrations of TPH-G or RBDM VOCs exceeding laboratory method reporting limits. Analytical data for borings advanced during the April 2008 and August 2008 investigations are shown in Figures 1 and 4 of the Attachments.

In May 2009, BB&A submitted a letter responding to questions raised by DEQ during a March 2009 telephone conversation. Specifically, it provided additional information concerning the source of drinking water provided by Bay City, further justified arguments for excluding the groundwater vapor intrusion exposure pathway for residential and occupational scenarios, and confirmed the location and inactive status of the water well at the Tillamook Creamery property.

DISCUSSION

Latimer Road Right-of-Way

As indicated in the preceding section, groundwater from August 2008 boring P6, advanced south-southeast of boring P5 (along the axis of flow as revealed by historic groundwater monitoring), did not contain constituents at concentrations exceeding method reporting limits. Based on these findings, BB&A concluded that impacted groundwater did not extend greater than 60 lateral feet from the 2000 and 2008 UST excavations. Therefore, even under worst-case conditions, groundwater impacts do not extend south of the Latimer Road right-of-way. Although (based on historic depth to water data) it is likely that workers will encounter groundwater during future construction or maintenance work conducted in Latimer Road, constituents have not been detected at concentrations exceeding generic RBC standards for the groundwater in excavation exposure pathway (assuming construction worker and excavation worker exposure scenarios). As shown in Figure 1 (see Attachments), groundwater with TPH-G and benzene at concentrations exceeding generic RBCs for construction and excavation workers is restricted to the Tillamook Creamery property. As a result, DEQ considers future risks to construction and/or excavation workers performing work in the Latimer Road right-of-way to be minimal.

Soil analytical data for boring P5 did not indicate TPH-G or BTEX at concentrations exceeding laboratory MRLs (Figure 4 of Attachments). Likewise, field screening of soil samples collected from boring P6 did not reveal evidence of petroleum hydrocarbon contamination. Therefore, it is unlikely that petroleum hydrocarbon-impacted soil will be encountered during future construction or maintenance work conducted in the Latimer Road right-of-way.

Bay Breeze Golf Course Property

The findings of the August 2008 investigation confirmed that petroleum hydrocarbon-impacted soil and groundwater does not extend onto the Bay Breeze Golf Course property (see Figures 1 and 4 of Attachments). Based on the inactive status of the irrigation well (TILL 50600) on the golf course property, the cross-gradient location of this well with respect to the former UST excavations, and distance to commercial-use structures on the golf course property, it is unlikely that current and/or likely future occupational workers will be exposed to impacted groundwater from the southern portion of the Tillamook Creamery property. Likewise, soil contamination in the southern portion of the Tillamook Creamery property does not extend onto the Bay Breeze Golf Course property.

DEQ is considering NFA status for this release incident. Because impacted groundwater extends a limited distance off-site, DEQ is requesting comments concerning the proposed closure in accordance with Oregon Administrative Rules 340-122-0260(2).

While disturbance of soil or groundwater may be unlikely, if it were brought to the surface it would have to be sampled, managed, and disposed of in accordance with DEQ regulations and policies.

Please contact DEQ if you have any questions or wish to review the cleanup file. DEQ will evaluate comments from affected parties as part of its review process. DEQ requests that all comments (or requests for an extension to the comment period) be submitted by no later than **September 2, 2009.**

I can be reached by telephone at (503) 229-5024, by email at schatz.jeff@deq.state.or.us, or by mail at the address listed in the letterhead above. A copy of the cleanup file is available for review by appointment. To review the cleanup file, please call Lynne Kent at (503) 229-6170 to schedule an appointment. Please reference this release by File No. **29-08-0695**.

Respectfully,

Jeff K. Schatz, R.G.
UST Cleanup Project Manager

Attachments: Figure 1 – Site Plan Showing Groundwater Analytical Results (revised), Bergeson-Boese & Associates, Inc. (July 24, 2009)

Figure 4 – Site Plan Showing Soil Analytical Data, Bergeson-Boese & Associates, Inc. (July 29, 2008)

cc: Erik R.D. Chapman, R.G.
Bergeson-Boese & Associates, Inc.
25195 SW Parkway Avenue, Suite 207
Wilsonville, OR 97070

(jks:JKS)

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MIKE AND PEGGY LEHMAN
BAY BREEZE GOLF & RANGE
2325 LATIMER RD
TILLMOOK OR 97141

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature]

☒ Agent
☐ Addressee

B. Received by *(Printed Name)* MARC LEHMAN

C. Date of Delivery 8-1-09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7005 0390 0005 5460 8985

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

UNITED STATES POSTAL SERVICE

PORTLAND OR 972

01 AUG 2009 PM 3 Y

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

DEQ NORTHWEST REGION
2020 SW 4TH AVE STE 400
PORTLAND OR 97201

DEPT OF ENVIRONMENTAL QUALITY
RECEIVED
AUG 03 2009
NORTHWEST REGION

Schatz

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

LEANN WELCH DIRECTOR
TILLAMOOK COUNTY PUBLIC WORKS DEPT
503 MAROLF LOOP RD
TILLAMOOK OR 97141

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Peggy Weitman ☒ Agent ☐ Addressee

B. Received by (*Printed Name*) Peggy Weitman
C. Date of Delivery 8-3-09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7009 0080 0000 4707 5074

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

UNITED STATES POSTAL SERVICE

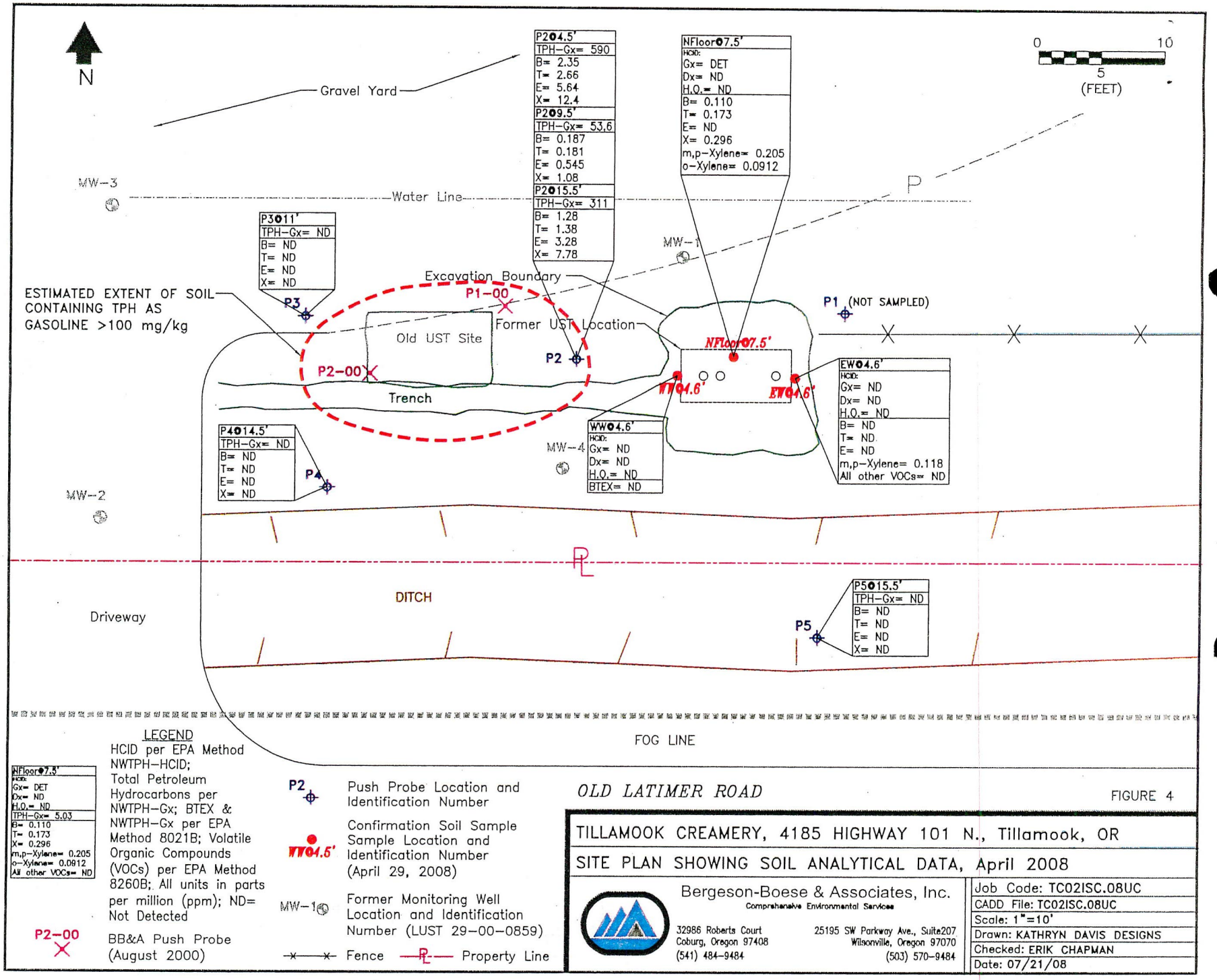
First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

DEPT OF ENVIRONMENTAL QUALITY
RECEIVED
AUG 04 2009
NORTHWEST REGION

• Sender: Please print your name, address, and ZIP+4 in this box •

DEQ NORTHWEST REGION
2020 SW 4TH AVE STE 400
PORTLAND OR 97201

Schatz



NFloor 07.5'
HCID:
Gx= DET
Dx= ND
H.O.= ND
TPH-Gx= 5.03
B= 0.110
T= 0.173
X= 0.296
m,p-Xylene= 0.205
o-Xylene= 0.0912
All other VOCs= ND

LEGEND

HCID per EPA Method NWTPH-HCID; Total Petroleum Hydrocarbons per NWTPH-Gx; BTEX & NWTPH-Gx per EPA Method 8021B; Volatile Organic Compounds (VOCs) per EPA Method 8260B; All units in parts per million (ppm); ND= Not Detected

P2-00 BB&A Push Probe (August 2000)

P2 Push Probe Location and Identification Number

WW 04.5' Confirmation Soil Sample Sample Location and Identification Number (April 29, 2008)

MW-1 Former Monitoring Well Location and Identification Number (LUST 29-00-0859)

Fence — Property Line

OLD LATIMER ROAD

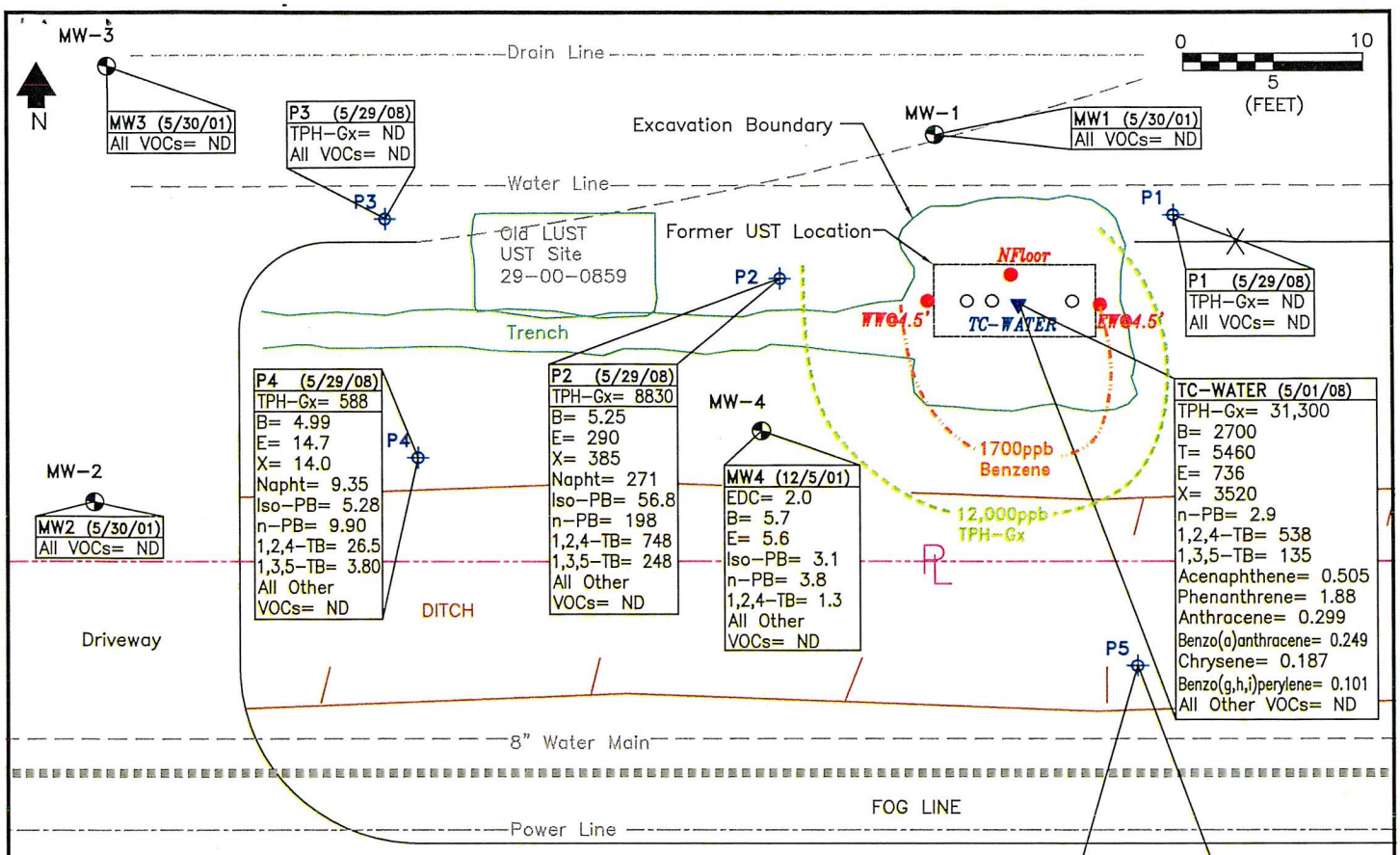
FIGURE 4

TILLAMOOK CREAMERY, 4185 HIGHWAY 101 N., Tillamook, OR

SITE PLAN SHOWING SOIL ANALYTICAL DATA, April 2008

Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services
32986 Roberts Court
Coburg, Oregon 97408
(541) 484-9484
25195 SW Parkway Ave., Suite207
Wilsonville, Oregon 97070
(503) 570-9484

Job Code:	TC02ISC.08UC
CADD File:	TC02ISC.08UC
Scale:	1"=10'
Drawn:	KATHRYN DAVIS DESIGNS
Checked:	ERIK CHAPMAN
Date:	07/21/08



LEGEND

1700ppb Benzene — ISO Concentration Contour for Dissolved Benzene

12,000ppb TPH-Gx — ISO Concentration Contour for TPH-Gx

P5 (5/29/08)
TPH-Gx= 562
B= 50.1
T= 159
E= 24.3
X= 146
n-PB= 1.11
1,2,4-TB= 10.7
1,3,5-TB= 4.39
All Other
VOCs= ND

Total Petroleum Hydrocarbons per NWTPH-Gx, units in parts per million (ppm);
Volatile Organic Compounds (VOCs) per EPA Method 8260B, units in parts per billion (ppb); ND= Not Detected

P2 — Proposed Push Probe Location and Identification Number

WW4.5' — Confirmation Soil Sample Location and Identification Number

MW-1 — Former Monitoring Well Location and Identification Number (LUST 29-00-0859)

PL — Property Line

Fence

FIGURE 1

TILLAMOOK CREAMERY, 4185 Highway 101 N., Tillamook, OR

SITE PLAN SHOWING GROUNDWATER ANALYTICAL RESULTS

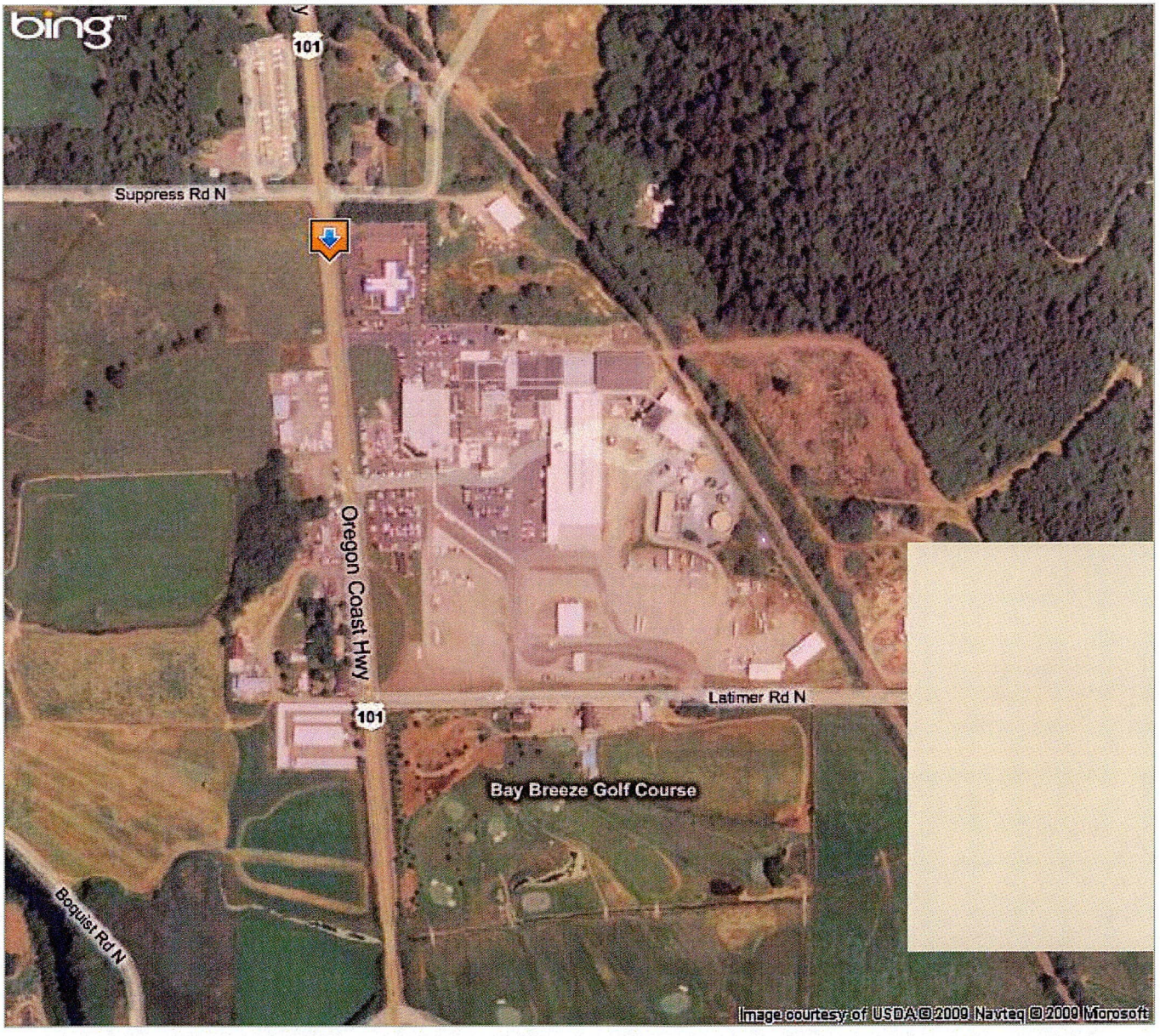
Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services
32986 Roberts Court
Coburg, Oregon 97408
(541) 484-9484
25195 SW Parkway Ave., Suite207
Wilsonville, Oregon 97070
(503) 570-9484

Job Code:	TC02ISC.08UC
CADD File:	TC02ISC.08UC
Scale:	1"=10'
Drawn:	KATHRYN DAVIS DESIGNS
Checked:	ERIK CHAPMAN
Date:	07/24/09

Bing Maps

4185 Highway 101 N, Tillamook, OR 97141-7770

My Notes



Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services

Eugene Office
32986 Roberts Court
Coburg, Oregon 97408

P.O. Box 71158
Eugene, Oregon 97401

(541) 484-9484
Fax (541) 484-4188

Portland Office
25195 SW Parkway Ave.
Suite 207
Wilsonville, Oregon 97070

(503) 570-9484
Fax (503) 570-0384

www.bergeson-boese.com

CCB# 76509
WACCR# BERGEBA036PC

July 23, 2009

Mr. Jeff Schatz - UST Cleanup Project Manger
Oregon Department of Environmental Quality
Northwestern Region Office
2020 SW 4th, Suite 400
Portland, Oregon 97201

Re: Response to Telephone Inquiry
Supplemental Investigation of the Magnitude and Extent of Contamination

For: Mr. Shawn Reiersgaard
Tillamook Creamery Association
4185 Highway 101 North
Tillamook, Oregon
LUST 29-08-0695

Dear Mr. Schatz:

This letter is in response to your request for additional information at the above-referenced Leaking Underground Tank (LUST) facility (LUST 29-08-0695).

The attached map depicts the 12,000 parts per billion (ppb) iso-concentration contour for total petroleum hydrocarbons as gasoline (TPH-Gx) and the 1,700 ppb iso-contour for benzene, as requested. The iso-contour lines were estimated using attenuation rates calculated from groundwater sample data for "TC-Water" collected from standing water in the excavation and from three (3) surrounding push probe locations (P-1, P-2, and P-5). The iso-contours represent the most stringent applicable RBC at the site (*Groundwater in an Excavation)* for the respective contaminants.

Should you have any questions regarding the information presented in this letter, please feel free to contact us at (503) 570-9484.

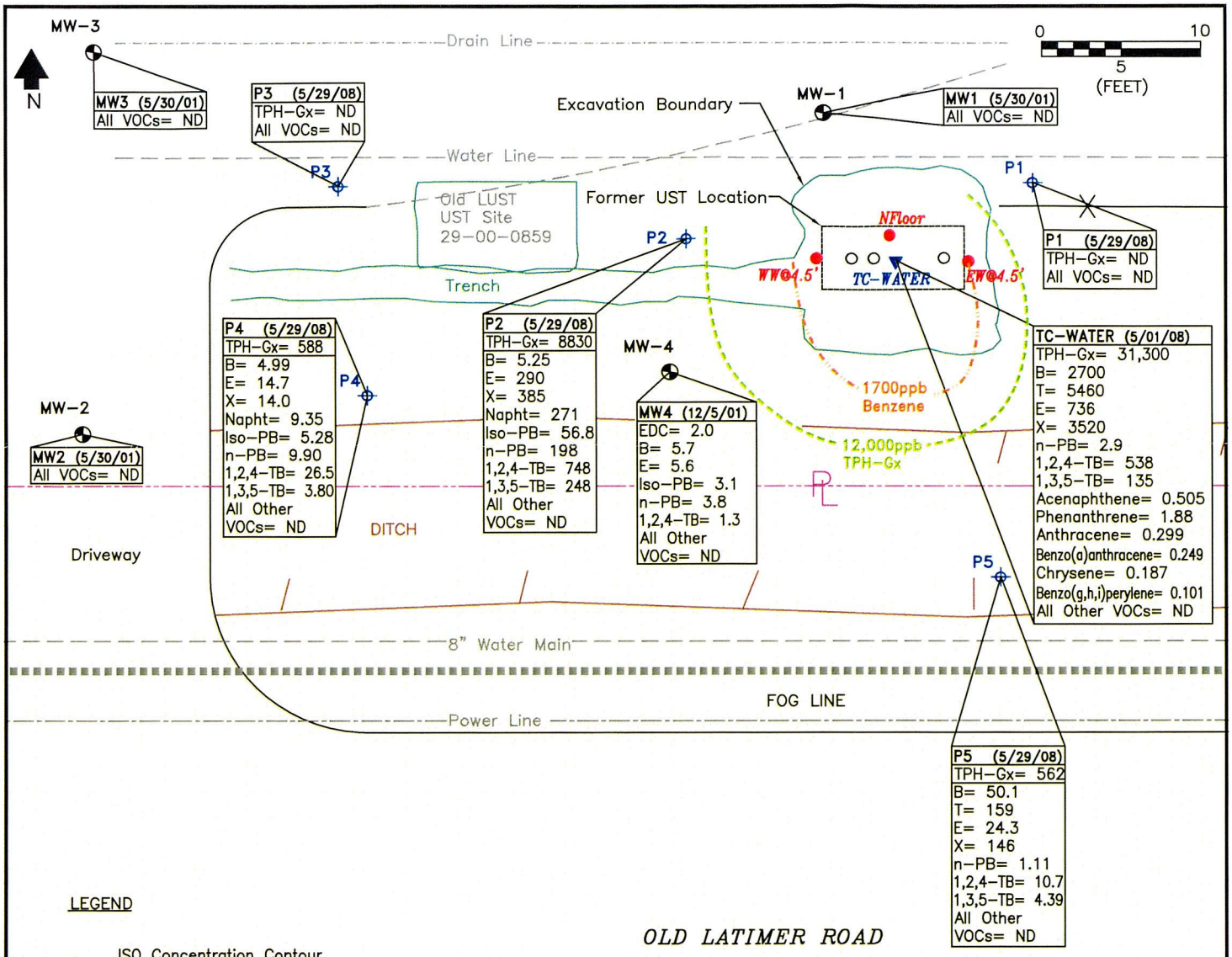
Sincerely,
Bergeson-Boese & Associates, Inc.

Erik R.D. Chapman, RG
Project Manager

Attachment 1: Estimated extent of dissolved contaminants in groundwater

ATTACHMENT 1

Estimated Extent of Dissolved Contaminants in Groundwater



LEGEND

1700ppb Benzene — ISO Concentration Contour for Dissolved Benzene

12,000ppb TPH-Gx — ISO Concentration Contour for TPH-Gx

P5 (5/29/08)
TPH-Gx= 562
B= 50.1
T= 159
E= 24.3
X= 146
n-PB= 1.11
1,2,4-TB= 10.7
1,3,5-TB= 4.39
All Other
VOCs= ND

Total Petroleum Hydrocarbons per NWTPH-Gx, units in parts per million (ppm); Volatile Organic Compounds (VOCs) per EPA Method 8260B, units in parts per billion (ppb); ND= Not Detected

P2 — Proposed Push Probe Location and Identification Number

WW@4.5' — Confirmation Soil Sample Location and Identification Number

MW-1 — Former Monitoring Well Location and Identification Number (LUST 29-00-0859)

PL — Property Line

Fence

FIGURE 1

TILLAMOOK CREAMERY, 4185 Highway 101 N., Tillamook, OR

SITE PLAN SHOWING GROUNDWATER ANALYTICAL RESULTS

Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services

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25195 SW Parkway Ave., Suite207
Wilsonville, Oregon 97070
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Job Code:	TC02ISC.08UC
CADD File:	TC02ISC.08UC
Scale:	1"=10'
Drawn:	KATHRYN DAVIS DESIGNS
Checked:	ERIK CHAPMAN
Date:	07/24/09

UST CLEANUP TELEPHONE USE REPORT

CALL FROM/TO: Erik Chapman DATE: 6-10-09

WITH: Burgeson-Boese TIME: 10:15 AM

TELEPHONE NO: (503) 570-9484

REGARDING: Tillamook Creamery

FILE NO: 29-08-0755

SUMMARY OF CALL

T/C to Consultant - informed him I was preparing comment solicitation letter

Requested a figure showing the inferred extent of GW contamination; He will get one prepared and forward to me.

Staff Signature

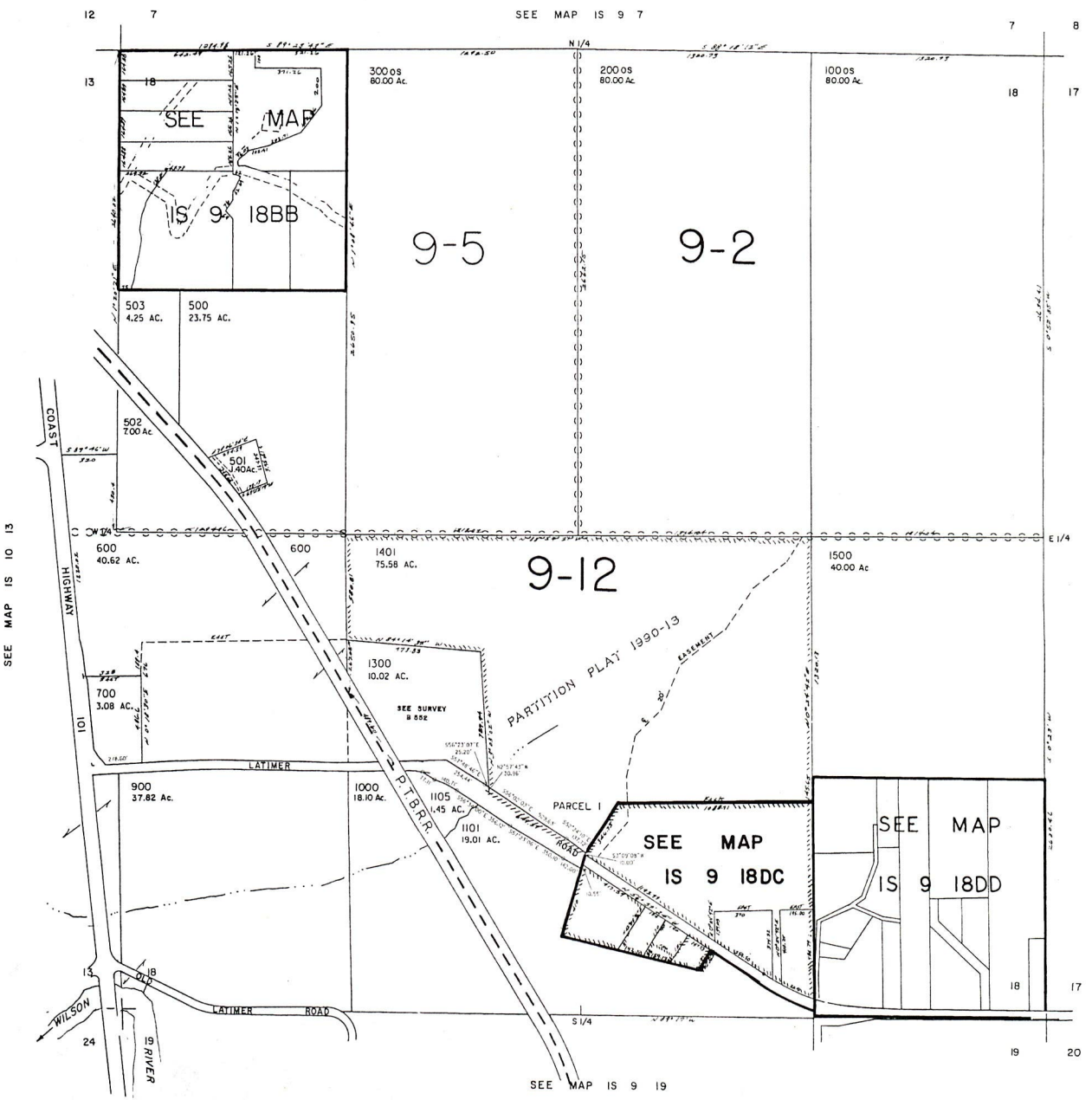
Await
figure from
Bergeson-Borse
to send out
comment solicitation

1S 9W
Section 18

ASSESSMENT PURPOSE ONLY

TILLAMOOK COUNTY

1" = 400'



& INDEX

CANCELLED NO.
400 THRU 408
411 THRU 413
800
1100
1102 THRU 1104
1200
1400
1402
1403

IS 9 18
& INDEX

REVISED 11/13/08, WS

SCHATZ Jeff

From: ROBERTSON Bill
Sent: Thursday, June 04, 2009 5:01 PM
To: SCHATZ Jeff
Subject: 29-08-0695 Tillamook Creamery

Hi Jeff,

I'd like to provide you with a few thoughts regarding issues we discussed at our meeting earlier today.

Although a limited amount of work was done at the site, at least a few of the borings appear to be appropriately located near the axis of the groundwater flow direction. This would provide us an indication whether there is significant residual contamination. The outer boring was ND, so there isn't any indication of a significant spread of contamination to the adjacent property. A little contamination likely reaches under the street, but not at a concentration above the construction/excavation worker exposure scenario. The area is underlain with fine-grained sediments, which will minimize the spread of any residual contamination. Available information indicates groundwater ingestion is not a complete exposure pathway and none of the detected concentrations from the borings exceed any other generic RBCs.

Based upon our discussion and my limited review, I would support issuing an NFA for the release from the second tank discovered at the site.

Bill Robertson
Project Manager/Hydrogeologist
UST Cleanup and Compliance Section
Office 503-229-6843
Fax 503-229-6945
e-mail robertson.bill@deq.state.or.us
website *http://www.deq.state.or.us/lq/tanks/index.htm*

Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services

Eugene Office
32986 Roberts Court
Coburg, Oregon 97408

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Eugene, Oregon 97401

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Wilsonville, Oregon 97070

(503) 570-9484
Fax (503) 570-0384

www.bergeson-boese.com

CCB# 76509
WACCR# BERGEBA036PC

May 14, 2009

Mr. Jeff Schatz - UST Cleanup Project Manger
Oregon Department of Environmental Quality
Northwestern Region Office
2020 SW 4th, Suite 400
Portland, Oregon 97201

Re: Response to Telephone Inquiry
Supplemental Investigation of the Magnitude and Extent of Contamination

For: Mr. Shawn Reiersgaard
Tillamook Creamery Association
4185 Highway 101 North
Tillamook, Oregon
LUST 29-08-0695

Dear Mr. Schatz:

In a March 19, 2009 telephone conversation you posed several questions regarding the recent investigations conducted at the above-referenced Leaking Underground Tank (LUST) facility (LUST 29-08-0695). This letter presents additional information to address your questions.

Background

Bergeson-Boese & Associates, Inc. (BB&A) has completed an investigation of the below ground release of petroleum hydrocarbons at LUST 29-08-0695 at the above-mentioned property. Results of the investigation were presented to the Department of Environmental Quality (DEQ) in reports entitled: *20-Day Letter Report*, dated June 27, 2008; *Investigation for Magnitude and Extent of Contamination, and Conceptual Site Model*, dated July 29, 2008; and *Supplemental Investigation of the Magnitude and Extent of Contamination*, dated September 23, 2008.

BB&A is pleased to offer the following additional information in response to your questions regarding previous site investigations.

Mr. Schatz
May 14, 2009

Question 1: Why were soil samples collected during the investigations of April 1, April 28, 2008 not analyzed for the Risk Based Concentration (RBC) list of constituents?

During initial site assessment activities on April 1, 2008, BB&A collected two (2) soil samples from the UST excavation from the original groundwater/soil interface and analyzed them for TPH-HCID and benzene, toluene, ethylbenzene, and xylenes (BTEX). This approach follows the investigation approach as allowed under Soil Matrix rules (Oregon Administrative Rules [OAR] 340-122-340. The two (2) unsaturated soil samples from the pit sidewalls were non-detect for TPH-HCID and BTEX constituents, meeting the department's soil cleanup standards under OAR 340-122-340(4)(b).

Soil impacts in the general area of the release are likely due to a historical gasoline release from LUST site 29-00-0859, located approximately 25 feet west of the current release site. In 2000, soil samples collected from the sidewalls of this older LUST site were detected with elevated TPH as gasoline as high as 720 ppm at a depth of 6.5 feet, exceeding the Soil Matrix Level II cleanup levels established for the site at the time. These soil impacts were never removed and remain in-place today.

Recent soil samples collected from push-probe P-2 on April 28, 2008 located between the old LUST 29-00-0859 and the current release site were detected with TPH-Gx up to 590 ppm with the highest concentrations at a depth of approximately 4.5 feet BLS. The presence of TPH-Gx concentrations in soil near the historical LUST site and the decreasing concentrations in soil away from the older UST pit, combined with the non-detect results of sidewalls samples collected from the current UST pit indicate soil impacts are a most likely a legacy of the older release rather from the current release.

The current release was caused by a spill directly into the water of the excavation, not from surface releases that could have impacted unsaturated soils. As such, BB&A believes that soil is not a media of concern for the recent release, but rather impacts are limited to groundwater in the immediate area of the release.

Residual soil and groundwater impacts left in-place at the former LUST site 29-00-0859 was evaluated by the DEQ and the DEQ determined that based on a Conceptual Site Model developed for the site, there are no complete exposure pathways for the residual soil impacts. The older LUST site 29-00-0859 was granted No Further Action from the DEQ on August 20, 2002.

Question 2: What is the source of the City of Bay City's municipal water?

The City of Bay City derives its water from two (2) wells located approximately three (3.0) miles northeast of the LUST site on a parcel of land identified as tax lot 1002 of Township 1 North, Range 3 West and an address of 7850 Kilchus River Road (see attached Vicinity Map in **Attachment 1**). The wells are designated by Oregon Water Resources as well logs TILL 018 and TILL50075. Well logs for the wells used by the Kilchus Water District are included in **Attachment 2**. According to the well logs, the wells derive groundwater from a depth of approximately 60 feet BLS.

According to Mr. Dave Pace of the Bay City Public Works Department ((503) 377-4121), there is no hydraulic connection between the groundwater aquifer and the Kilchus River located adjacent to the city's well field. Due to the distance from the subject property and the depth of groundwater extraction from the municipal wells, the Kilchus Water District water supply does not appear to be at risk from site contaminants at the Tillamook Creamery LUST site.

Question 3: Are there any plans to build worker occupied buildings within 50 feet of the contaminated groundwater?

Benzene in groundwater exceeds the RBC for *Vapor Intrusion into Buildings* for the occupational worker in the immediate area surrounding the former UST. In BB&A's Conceptual Site Model, the current exposure pathway via *Vapor Intrusion into Buildings* from contaminated groundwater was excluded since the nearest occupied building is over 50 away. According to Mr. Shawn Reiersgaard of the Tillamook Creamery, there are no plans to develop within 50 feet of the contaminated groundwater. The primary reasons that no development is anticipated are: 1) the current production of dairy cows has reached a maximum threshold in the region, curtailing any future expansion of the creamery facility; 2) in the unlikely event the facility were to expand, there are several undeveloped areas at the facility more suitable for development; and 3) the former UST site lies outside of the facility's fence line and is adjacent to the Latimer Road right-of-way.

Question 4: Are there any plans to use groundwater beneath the site for domestic purposes?

There is one (1) water well identified as TILL478 located on the Tillamook Cheese property. According to the well log, the well is located 300 feet east and 300 feet south of the northwest corner of the SW 1/4 of Section 18, or approximately 750 feet north-northwest of the LUST site.

The well was installed in 1974 to a depth of 85 feet BLS with no screens or perforations. As such, the well appears to draw water from a depth of 85 feet BLS.

According to Mr. Shawn Reiersgaard of the Tillamook Creamery, the well is not being used for domestic water use because domestic water is currently supplied by the City of Bay City municipal water supply. Mr. Reiersgaard stated there are no future plans to use the well for domestic purposes.

Recommendations

Based on the results of soil and groundwater site investigations, the completion of a CSM, and an evaluation of soil and groundwater data relative to applicable pathways of exposure and receptor populations, the March 31, 2008 release of hydrocarbons from an abandoned UST does not appear to have resulted in unacceptable human health risk. BB&A believes that all applicable response, abatement, site characterization, and investigation requirements in OAR 340-122-205 through 340-122-240 have been completed, and the site meets the requirements of OAR 340-122-244 through 340-122-250 for completing risk-based cleanups. If DEQ agrees with this assessment, BB&A requests that LUST 29-08-0695 be issued a No Further Action.

Limitations

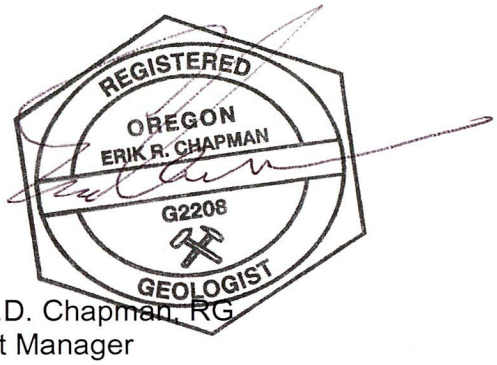
Professional services provided by BB&A have been performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental research and consulting firms practicing in this or similar localities. No other warranty, express or implied, is made as to the professional advice included in this report.

No investigation is thorough enough to ensure that no contamination is present on a particular property or in a particular area. The analyses of the samples collected only indicates the presence or absence of contaminants in those discrete sample locations. Based on our experience with similar investigations, and within the limits of the scope of work and budget constraints of this project, the samples were collected from areas most likely to be impacted by potential contamination. However, the results from the collected samples should only be considered as an indicator of subsurface conditions and not as a guarantee of the absence of contaminants in areas not sampled.

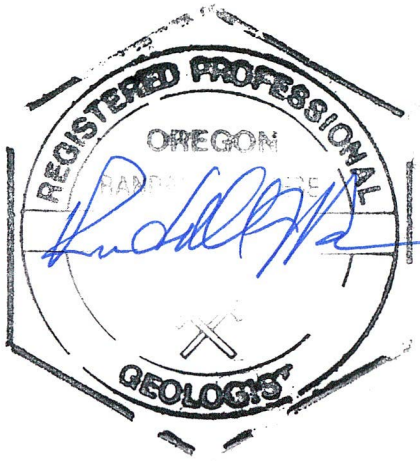
Mr. Schatz
May 14, 2009

Should you have any questions regarding the information presented in this report, please feel free to contact us at (503) 570-9484.

Sincerely,
Bergeson-Boese & Associates, Inc.



Erik R.D. Chapman, RG
Project Manager

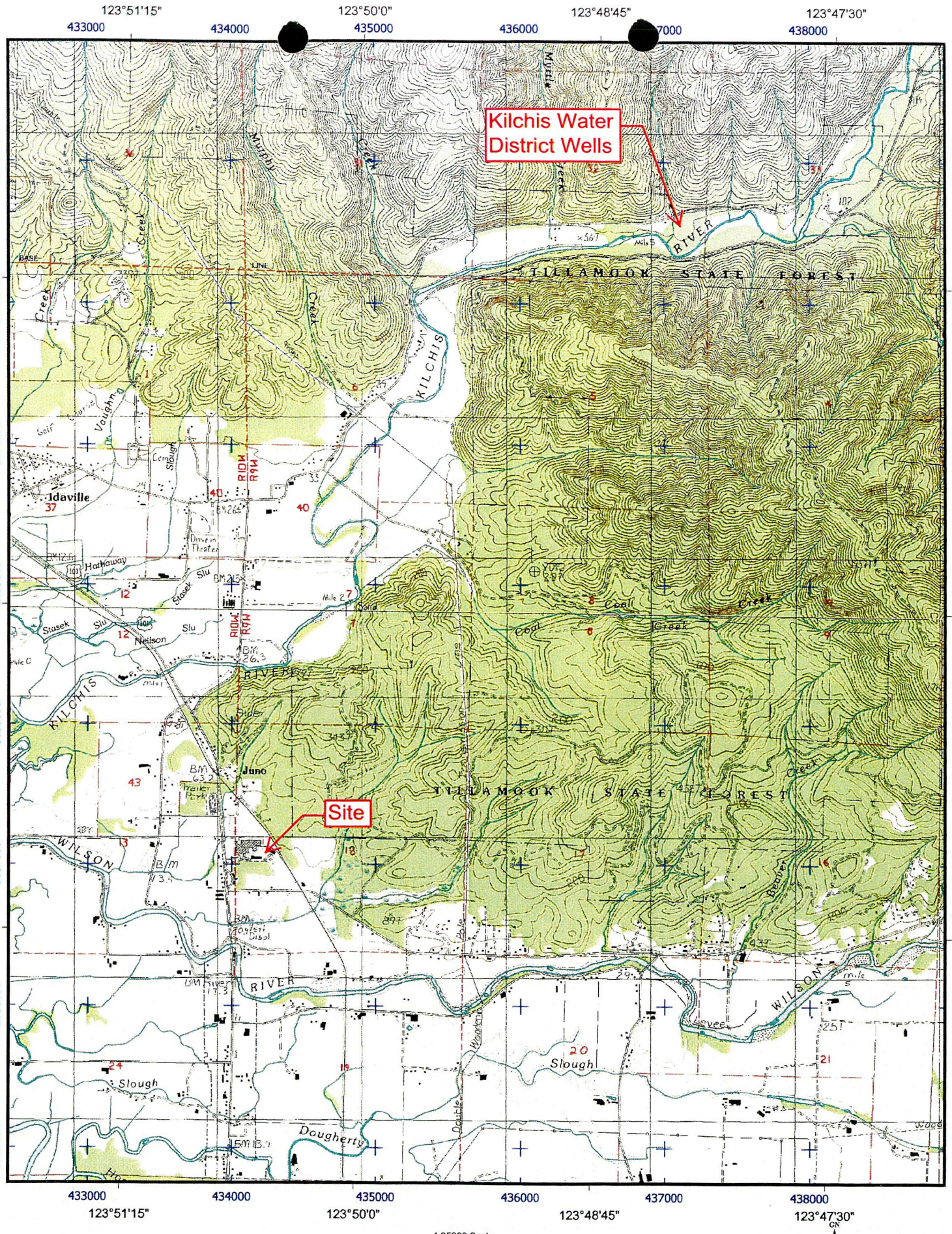


Randall J. Boese, RG
Senior Hydrogeologist

Attachment 1: Vicinity Map Showing Location of Kilchus Water District Supply Wells
Attachment 2: Well Logs for Kilchus Water District Supply Wells

ATTACHMENT 1

Vicinity Map Showing Kilchus Water District Supply Wells


Kilchis Water District Wells
Site
123°51'15"
123°50'0"
123°48'45"
123°47'30"
433000
434000
435000
436000
437000
438000
45°31'15"
45°30'0"
45°28'45"
5042000
5041000
5040000
5039000
5038000
5037000
5036000
5035000
TILLAMOOK STATE FOREST
KILCHIS RIVER
WILSON RIVER
Idaville
Hathaway
Neilson
Juno
Coal Creek
Slough
Dougherty
1:35000 Scale
0 0.25 0.5 0.75 1 Miles
0 0.25 0.5 0.75 1 Kilometers
Universal Transverse Mercator (UTM) Projection Zone10
North American Datum of 1983 (NAD83)
UTM Grid shown in Blue
GN
TN 1°
MN 17°
Magnetic declination at center of map on May 6, 2009

ATTACHMENT 2

Kilchus Water District Well Logs

OCT - 5 1990

WATER RESOURCES DEPT.
SALEM, OREGON

Till 018

1S/9W16.aa

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

(START CARD) # 23903

(1) OWNER:

Well Number:

Name: Kilchis Water District

Address: 8155 Kilchis River Rd.

City: Tillamook State: OR Zip: 97141

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☐ Rotary Air ☒ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☒ Depth of Completed Well 66 ft.

Explosives used Yes ☐ No ☒ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12	0	66	Cement	0	18	6 sks+gel

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ft. to ft. Material

Gravel placed from 18 ft. to 66 ft. Size of gravel pea gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8	+2	19	250	☒	☐	☒	☐
		24	43	250	☒	☐	☒	☐
		58	66	250	☒	☐	☒	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method Johnson Screen

☒ Screens Type shaped wire Material galv steel

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
19	24	.033		8"	pipe	☒	☐
43	58	.033		8"	pipe	☒	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☒ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
75	8		1 hr.
150		40	"

Temperature of water 53° F Depth Artesian Flow Found

Was a water analysis done? ☐ Yes By whom

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata:

(9) LOCATION OF WELL by legal description:

County Tillamook Latitude Longitude

Township 1S N or S. Range 9W E or W, WM.

Section 6 NE ¼ NE ¼

Tax Lot 01801 Lot Block Subdivision

Street Address of Well (or nearest address) 7850 Kilchis River Rd., Tillamook, OR

(10) STATIC WATER LEVEL:

12 ft. below land surface. Date 09/27/90

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 12

From	To	Estimated Flow Rate	SWL
19	24	75	12
43	58	75	12

(12) WELL LOG:

Ground elevation

Material	From	To	SWL
Brown clay, occ. sandy	0	4	
Brown sand & gravel, occ. clay streaks	4	24	12
Gray clay	24	42	
Brown sand & gravel, occ. clay streaks	42	54	12
Blue-black sand & gravel, occ. clay streaks	54	60	12
Gray clay	60	66	

Date started 09/21/90 Completed 09/27/90

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number

Signed Date

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 573

Signed Date 09/29/90

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER

9809C.1/88

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

TILL 462

RECEIVED JUL -5 1989 WATER RESOURCES DEPT. SALEM, OREGON

1S/9W/6aa

(START CARD) # 9658

(1) OWNER:

Well Number: 2 WAT

Name Kilchis Water Dist.

Address 8155 Kilchis River Rd.

City Tillamook State Oregon Zip 97141

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☒ Depth of Completed Well 65 ft.

Explosives used Yes ☐ No ☒ Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12	0	18	Cement	0	18	16
8	18	65	—	—	—	—

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ____ ft. to ____ ft. Material ____

Gravel placed from ____ ft. to ____ ft. Size of gravel ____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8	+1	58½	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) 58½

(7) PERFORATIONS/SCREENS:

☐ Perforations Method ____

☐ Screens Type ____ Material ____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
10	41	60	1 hr.

Temperature of water 54 Depth Artesian Flow Found ____

Was a water analysis done? ☐ Yes By whom ____

Did any strata contain water not suitable for intended use? ☒ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____

Depth of strata: ____

(9) LOCATION OF WELL by legal description:

County Tillamook Latitude ____ Longitude ____

Township 1S N or S, Range 9W E or W, WM.

Section 6 NE ¼ NE ¼

Tax Lot 1801 Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) 7550 Kilchis River Rd Tillamook, Oregon 97141

(10) STATIC WATER LEVEL:

19 ft. below land surface. Date 6-6-89

Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:

Depth at which water was first found 19

From	To	Estimated Flow Rate	SWL
19	48	T	
48	65	10	

(12) WELL LOG:

Ground elevation ____

Material	From	To	SWL
Topsoil	0	1	
Brown Clay	1	19	
Gray Clay	19	48	
Gray Clay & Med. Gravel	48	65	19

Date started 6-6-89 Completed 6-6-89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number ____

Signed ____ Date ____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1221

Signed Larry C Every Date 6-6-89

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER

9809C 3/88

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
MAR 26 1968
STATE ENGINEER
SALEM OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

TIL 463

State Well No. 1/9w-6 cca

State Permit No.

(1) OWNER:
Name Kilchis Water district
Address Rte 1 Box 582 Bay City, Ore.

(2) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary [X] Driven [ ]
Cable [ ] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):
Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]

(5) CASING INSTALLED:
Threaded [ ] Welded [X]
12" Diam. from 0 ft. to 70 ft. Gage 1/4 wall
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS:
Perforated? [ ] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? [ ] Yes [X] No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WATER LEVEL: Completed well.
Static level 30 ft. below land surface Date 3-11-68
Artesian pressure lbs. per square inch Date

(9) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [X] No If yes, by whom?
gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test 75 gal./min. with 70 ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? [ ] Yes [X] No

(10) CONSTRUCTION:
Well seal—Material used Bentonite
Depth of seal 25 feet ft.
Diameter of well bore to bottom of seal 17 XX in.
Were any loose strata cemented off? [ ] Yes [X] No Depth
Was a drive shoe used? [ ] Yes [X] No
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [ ] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(11) LOCATION OF WELL:
County Tillamook Driller's well number
¼ ¼ Section 6 T. 1S R. 9 W.M.
Bearing and distance from section or subdivision corner

(12) WELL LOG:
Diameter of well below casing 12 inch
Depth drilled 150 ft. Depth of completed well 150 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level as drilling proceeds. Note drilling rates.

MATERIAL	From	To	SWL
Top soil	0	3	
Yellow clay	3	17	
Cemented gravel	17	85	
Blue med. rock	85	150	

Work started 3-7-68 19 Completed 3-9-68 19
Date well drilling machine moved off of well 3-11-68 19

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] Ralph Turner (Drilling Machine Operator) Date 3-23, 1968

Drilling Machine Operator's License No. 254

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Ralph Turner Drilling Co. (Person, firm or corporation) (Type or print)

Address Rte. 1 Box 141 Hillsboro, Ore 97123

[Signed] Ralph Turner (Water Well Contractor)

Contractor's License No. 247 Date 3-23, 1968

(USE ADDITIONAL SHEETS IF NECESSARY)

RECEIVED

AUG 19 1996

WATER RESOURCES DEPT.
SALEM, OREGON

Till

50075

WELL I.D.# LO1711

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

(START CARD) # 89981

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number 378

Name Kilchis Water District

Address 8155 Kilchis Rive Rd.

City Tillamook State OR. Zip 97141

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD:

[ ] Rotary Air [ ] Rotary Mud [X] Cable [ ] Auger

[ ] Other

(4) PROPOSED USE:

[ ] Domestic [X] Community [ ] Industrial [ ] Irrigation

[ ] Thermal [ ] Injection [ ] Livestock [ ] Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval [ ] Yes [X] No Depth of Completed Well 75 ft.

Explosives used [ ] Yes [X] No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
12	0	38	bentonite	0	38	38
8	38	75				

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E

[ ] Other

Backfill placed from ft. to ft. Material

Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8	+2	75	1/4	[X]	[ ]	[X]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner:					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s) 75

(7) PERFORATIONS/SCREENS:

[X] Perforations Method mills knif

[ ] Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
45	65	1/4/2	140	8		[X]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour

[X] Pump [X] Bailer [ ] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
320	1'		2 hr.

Temperature of water 54 Depth Artesian Flow Found

Was a water analysis done? [ ] Yes By whom

Did any strata contain water not suitable for intended use? [ ] Too little

[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [ ] Other

Depth of strata:

(9) LOCATION OF WELL by legal description:

County Tillamook Latitude Longitude

Township 1 N or S Range 9 E or W WM.

Section 6 NE 1/4 NE 1/4

Tax Lot 1801 Lot Block Subdivision

Street Address of Well (or nearest address) 7850 Kilchis River RD.

(10) STATIC WATER LEVEL:

16 ft. below land surface. Date 8/15/96

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 21

From	To	Estimated Flow Rate	SWL
21	30	35	18
45	65	320	16

(12) WELL LOG:

Ground Elevation

Material	From	To	SWL
top soil	0	1	
clay brown	1	21	
gravel/sand brown	21	30	18
clay/sand brown	30	45	
sand/gravel red brown	45	65	16
clay brown	65	67	
sand brown	67	69	
sand/gravel cemented gray	69	75	

Date started 8/8/96 Completed 8/15/96

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number

Signed Date

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

AMERICAN WELL DRILLING INC.

WWC Number 663

Signed Rocky C. Gale Date 8/16/96

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

SCHATZ Jeff

From: Dave Pace [dpace@ci.bay-city.or.us]
Sent: Friday, March 20, 2009 11:13 AM
To: SCHATZ Jeff
Subject: Re: Inquiry Regarding Source of Drinking Water

Jeff,

1) Number of wells in system - 2

2) Casing size and production rate of wells - 12" @ 500 GPM.

3) Approximate depth of producing interval - Well #1 60 feet, Well #2 50 feet.

4) Approximate location of wells relative to the Tillamook Creamery site. Approx 3.2 miles.

David Pace

Public Works Superintendent

City of Bay City

----- Original Message -----
From: SCHATZ Jeff
To: dpace@ci.bay-city.or.us
Sent: Thursday, March 19, 2009 10:03 AM
Subject: Inquiry Regarding Source of Drinking Water

Hello Dave:

I'm a Project Manager with the Northwest Region DEQ in Portland. One of my projects is at the Tillamook Creamery facility (DEQ File No. 29-08-0695) which is reportedly on the Bay City water system. They have asked for no further action status for a petroleum release and I'm evaluating the request.

I'm looking for some general information regarding the source of the Bay City drinking water. Do you maintain a well system or is it surface water? If wells are the source, can you give me some general information on the following:

1) Number of wells in system

2) Casing size and production rate of wells

3) Approximate depth of producing interval

4) Approximate location of wells relative to the Tillamook Creamery site.

Any information you can provide along these lines would be appreciated. Best regards,

Jeff K. Schatz, R.G.

UST Cleanup Project Manager

Underground Storage Tank Section

Northwest Region

Oregon Department of Environmental Quality

503-229-5024

schatz.jeff@deq.state.or.us

UST CLEANUP TELEPHONE USE REPORT

CALL FROM/TO: Erik Chapman DATE: 3-19-09

WITH: Bergeson - Boese TIME: 10:40

TELEPHONE NO: (503) 570 - 9484

REGARDING: Tillamook Creamery

FILE NO: 29 - 08 - 0695

SUMMARY OF CALL

T/c to Erik Chapman regarding Tillamook Creamery project:

Requested clarification on 3 points regarding Closure:

1) No information concerning source of Bay City drinking water; informed him that I had an inquiry with the Bay City public works department

2) Because benzene levels exceed vapor intrusion RBC for possible future occupational worker use scenario, confirmation that ~~no~~ construction of buildings/structures within 10 feet of former USTs is requested.

3) Clarification of whether Leaching to GW pathway was determined to be complete as suggested by Table 4. They will also ask Tillamook Creamery to confirm that no use of "missing" water wells is planned for future

Staff Signature

UST CLEANUP TELEPHONE USE REPORT

CALL FROM/TO: Shawn Reiersgaard DATE: 3-17-09

WITH: Tillamook Creamery TIME: 11:15 AM

TELEPHONE NO: (503) 815 - 1338

REGARDING: Tillamook Creamery

FILE NO: 09 - 08 - 0695

SUMMARY OF CALL

T/C from Mr. Reiersgaard. He was calling with regard to status of the project. I told him that I had been assigned as PM of project.

He acknowledged that no cost recovery agreement had been returned, and that invoices for DEQ oversight would be forthcoming.

He indicated that he did not believe that add'l work would be necessary. I told him I'll be reviewing documents in near future

Staff Signature

file

Oregon

Theodore R. Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
Fax: (503) 229-6945
TTY: (503) 229-5471

11 March 2009

SHAWN REIERSGAARD
TILLAMOOK CREAMERY
PO BOX 313
TILLAMOOK OR 97141

Re: Tillamook Creamery
4185 Highway 101 North
Tillamook, Oregon 97141
File No. 29-08-0695

Dear Mr. Reiersgaard:

This letter will serve as notification that I have been assigned as Project Manager for the above-referenced release at the Tillamook Creamery property located at 4185 Highway 101 North in Tillamook, Tillamook County Oregon (site). In accordance with Oregon's Environmental Cleanup Law, you will receive invoices for direct and indirect expenses associated with DEQ's oversight of this project. To date, a signed Cost Recovery Agreement for this release has not been received by DEQ. For your convenience, an additional copy of the form has been included as an attachment to this letter.

DEQ acknowledges receipt of reports entitled *Investigation for Magnitude and Extent of Contamination and Conceptual Site Model* (July 29, 2008) and *Addendum Letter: Supplemental Investigation of the Magnitude and Extent of Contamination* (September 23, 2008), both submitted by Bergeson-Boese & Associates, Inc. (BB&A) on your behalf. BB&A has requested No Further Action status for this release incident. DEQ will review these reports and be in contact with you to discuss the results of the evaluation.

DEQ appreciates your cooperation and efforts to comply with the UST Cleanup Rules. In the meantime, if you have any questions, please contact me at (503) 229-5024.

Respectfully,

Jeff K. Schatz, R.G.
UST Cleanup Project Manager

cc:

Erik R.D. Chapman, R.G.
Bergeson-Boese & Associates, Inc.
25195 SW Parkway Avenue, Suite 207
Wilsonville, OR 97070

(jks:JKS)

UST CLEANUP TELEPHONE USE REPORT

CALL FROM/TO: Shawn Reiersgaard DATE: 2:30

WITH: Tilamook Creamery TIME: 3-11-09

TELEPHONE NO: (503) 815-1338

REGARDING: Tillamook Creamery

FILE NO: 29-08-0695

SUMMARY OF CALL

T/C to Shawn Reiersgaard ; Left messa

Staff Signature

Bergeson-Boese & Associates, Inc.

Comprehensive Environmental Services

25195 SW Parkway Ave.; Suite 207
Wilsonville, OR 97070
(503) 570-9484
(503) 570-0384 - Fax

TRANSMITTAL

Attention:	**Sir/Madam**	From:	**Erik RD Chapman, ext. 13**
Company:	**Oregon Department of Environmental Quality**	Date:	**09/23/08**
Phone Number:	**(503) 229-5263**		
Subject:	**Addendum Letter: Supplemental Investigation of the Magnitude and Extent of Contamination**		

Comments:

Bergeson-Boese & Associates, Inc. (BB&A) has completed additional investigation work at the above-referenced site and the results are presented for your review in the enclosed letter report titled "Supplemental Investigation of the Magnitude and Extent of Contamination, dated September 23, 2008.

Please review this addendum report and provide your comments.

Feel free to contact me at the number listed above if you have any questions.

Thank you,

Erik R.D. Chapman, RG,
Bergeson-Boese & Associates, Inc.

Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services

Eugene Office
32986 Roberts Court
Coburg, Oregon 97408

P.O. Box 71158
Eugene, Oregon 97401

(541) 484-9484
Fax (541) 484-4188

Portland Office
25195 SW Parkway Ave.
Suite 207
Wilsonville, Oregon 97070

(503) 570-9484
Fax (503) 570-0384

www.bergeson-boese.com

CCB# 76509
WACCR# BERGEBA036PC

September 23, 2008

Oregon Department of Environmental Quality
Northwestern Region Office
2020 SW 4th, Suite 400
Portland, Oregon 97201

Re: Addendum Letter: Supplemental Investigation of the Magnitude and Extent of Contamination

For: Mr. Shawn Reiersgaard
Tillamook Creamery Association
4185 Highway 101 North
Tillamook, Oregon
LUST 29-08-0695

Dear Sir/Madam:

On August 13, 2008, Bergeson-Boese & Associates, Inc. (BB&A) conducted a supplemental subsurface investigation at the subject property located at 4185 Highway 101 North in Tillamook, Oregon associated with a below ground release from an abandoned 500-gallon UST (LUST 29-08-0695). Previous investigations were completed in April 2008 to assess the type, magnitude and extent of contamination around the abandoned UST. Additional investigation was recommended to further define the lateral extent of groundwater impact. This letter report presents the results of the additional investigation work. The results from previous investigations are summarized and a recommendation for No Further Action is presented. A Site Location Map and Site Plan are provided in **Attachment A**.

Site Description

The Tillamook Creamery facility is located in the southwest quarter of Section 18, Township 1 South, Range 9 West, as referenced to the Willamette Meridian. The abandoned UST lies approximately one-quarter (0.25) mile east of the intersection of Latimer Road and Highway 101 North and approximately 25 feet north of Latimer Road near the southeast entrance to the creamery.

Background

The abandoned UST was discovered by utility crewmen near the southeast entrance to the Tillamook Creamery facility. A release of approximately five (5) gallons of gasoline and water occurred when the tank was inadvertently punctured during its removal by excavation equipment on March 31, 2008. The release was reported to the DEQ on June 11, 2008 and the site was issued DEQ case number Leaking Underground Storage Tank (LUST) site number 29-08-0695.

The release occurred approximately 25 feet east of a previously-investigated LUST site (LUST 29-00-0859). Four (4) former groundwater monitoring wells were installed, sampled, and later abandoned in association with the historical LUST site. The DEQ issued a "No Further Action" designation for LUST 29-00-0859 in August 2002. The locations of the former LUST and former monitoring wells MW-1 through MW-4 are illustrated on **Figure 2** in **Attachment A**.

BB&A completed an initial site assessment for the recent release on April 1, 2008. The purpose of the assessment was to identify and quantify the type of contamination caused by the release. A push probe investigation was subsequently completed on April 29, 2008 to investigate the magnitude and extent of soil and groundwater contamination. Results of the initial site assessment and push probe investigation along with an updated conceptual site model (CSM) are presented in BB&A's report entitled *Investigation for Magnitude and Extent of Contamination, and Conceptual Site Model*, dated July 29, 2008. Groundwater sampling results from April 1 and April 29, 2008 subsurface investigations are illustrated on **Figure 2**, **Attachment A**.

Scope of Work and Purpose - Supplemental Investigation (August 13, 2008)

The scope of work completed during this investigation included the installation and sampling of one (1) additional push probe soil boring located south-southeast (down gradient) of the recently-discovered UST. The purpose of the additional investigation was to delineate the down gradient extent of dissolved TPH and gasoline-related constituents in groundwater in accordance with OAR 340-122-0240.

Probing and Sampling Procedures

BB&A completed the push probe investigation on August 13, 2008. One (1) push probe was installed approximately 10 feet south of Latimer Road and south-southeast of the former UST using GeoProbe equipment. The push probe was advanced to a total depth of approximately 20 feet below land surface (BLS). The location of push probe boring (P-6) is presented on **Figure 2** in **Attachment A**.

Soil samples were collected continuously from the ground surface to the total depth of the boring using GeoProbe stainless steel core barrels lined with polyethylene sleeves. Soils were inspected

for the presence of soil contamination using visual and olfactory observation (i.e.,inspection for soil staining or gasoline odors) and measured for detectable volatile organic vapors using an Organic Vapor Meter with Photoionization detector (OVM-PID). Observations, measurements, and other field notes are recorded on the attached push probe log included in **Attachment B**.

Upon completing the push probe, a temporary well casing was installed, and accumulating groundwater was allowed to equilibrate inside the temporary well. Prior to sampling groundwater, approximately two (2) to three (3) gallons of groundwater was purged using a low-flow peristaltic pump and dedicated polyethylene tubing. A groundwater sample was collected from recharging formation water using the peristaltic pump at its lowest setting (0.3 to 0.5 liters per minute), and transferring groundwater directly into laboratory-supplied glassware with appropriate sample preservatives. One groundwater sample was submitted under chain-of-custody documentation to Test America of Beaverton, Oregon and analyzed for gasoline-range TPH using NWTPH-Gx and selected gasoline-related VOCs using EPA Method 8260B. A copy of the chain-of-custody document is provided in **Attachment C**.

Observations and Analytical Results

Soils encountered in push probe boring P-6 were predominantly composed of light gray clayey silt, silt, and sandy silt from the surface to approximately 10 feet BLS and dark gray sandy silt from approximately 10 feet to approximately 20 feet BLS (the total depth drilled). Soil lithology was consistent with soils encountered in previous push probes P-1 through P-5. Field examination of the soils did not identify any obvious contamination, using olfactory and visual inspection, nor during field analysis using an OVM-PID. Since no evidence of soil impacts were identified during probing and no contamination was previously detected in soil samples collected from push probe P-5, soil samples were not submitted for analysis.

The laboratory results of the groundwater sample collected from P-6 did not detect the presence of gasoline-range TPH or VOCs above the laboratory method reporting limits (MRLs). Groundwater sample analtyical results are summarized on **Table 2**. The complete laboratory report is presented in **Attachment C**.

Discussion

The "non-detect" laboratory results of the groundwater sample collected from push probe P-6 delineates the down gradient extent of dissolved gasoline-range TPH and gasoline-related VOCs in the vicinity of LUST sites 29-00-0859 and 29-08-0659. Based on this data, the down gradient extent of the dissolved contaminant plume lies at a point between previous push probe P-5 and the newly-installed push probe P-6, or less than approximately 60 feet south-southeast of the former release areas.

The down gradient delineation of the contaminant plume completes the investigation of the magnitude and extent of contamination in accordance with the requirements of OAR 340-122-0240. Based on the new data, the lateral extent of soil and groundwater contamination originating from LUST sites 29-00-0859 and 29-08-0659 appears to be delineated to a limited area between the former abandoned USTs and Latimer Road, and area measuring approximately 40 feet wide and 60 feet long. Dissolved CoCs do not appear to extend south of Latimer Road.

Table 1. Groundwater Analytical Results

All concentrations in micrograms per liter (µg/L), or parts per billion (ppb).
ND (<80.0): Indicates contaminant was not detected above method-reporting limit shown in parenthesis.
>S: The constituent RBC for this pathway is greater than the solubility limit of the constituent. Groundwater concentrations exceeding this value may Indicate free product.
Risk-based concentrations (RBCs) per Oregon Department of Environmental Quality's (DEQ's) *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites*, September 22, 2003. Screening levels were selected as the *Vapor Intrusion into Buildings* for the occupational receptor.

Analyte	P-6 (8/13/08)	Applicable DEQ Generic Risk-Based Concentrations	
		Volatilization to Outdoor Air for the Occupational Worker	Groundwater in an Excavation for the Construction/Exc. Worker
Gasoline-Range TPH	ND (<80.0)	>S	12,000
1,2-Dibromoethane	ND <(0.500)	960	28
1,2-Dichloroethane	ND <(0.500)	9,000	600
Benzene	ND <(0.200)	13,000	1,700
Toluene	ND <(0.500)	>S	200,000
Ethylbenzene	ND <(0.500)	>S	110,000
Xylenes (Total)	ND <(1.00)	>S	22,000
MTBE	ND <(2.00)	59,000	59,000
Naphthalene	ND <(2.00)	680	680
Isopropylbenzene	ND <(2.00)	>S	51,000
n-Propylbenzene	ND <(0.500)	98.0	4,500
1,3,5-Trimethylbenzene	ND <(0.500)	135	1,400
1,2,4-Trimethylbenzene	ND <(1.00)	538	1,300
Dissolved Lead	ND (<0.00100)	NE	--

Investigation Summary

BB&A has completed site investigations at the subject site and has identified applicable potential exposure pathways and receptor populations through the development of a Conceptual Site Model. Soil and groundwater sample results from subsurface investigations completed on April 1, April 29, and August 13, 2008 have been evaluated against generic Risk-Based Concentrations (RBCs) established in DEQ's *Risk-Based Decision-Making for the Remediation of Petroleum-Contaminated Sites*, dated September 22, 2003. Results of the site investigations and CSM were presented to the DEQ in a report entitled *Investigation for Magnitude and Extent of Contamination, and Conceptual Site Model*, dated July 29, 2008.

A summary of the results of previous investigations and site evaluation is as follows:

- Based on the current and reasonably-likely future land and water use, the Occupational, Construction and Excavation Worker receptor scenarios were identified as potential receptors at the site. The CSM identified the *Volatilization to Outdoor Air* for the Occupational Worker and *Groundwater in an Excavation* for the construction and excavation worker as complete pathways under current and future land and water use conditions.

- Soil and groundwater conditions were assessed by sampling and analyzing nine (9) soil samples and seven (7) groundwater samples. Soil and groundwater samples were collected from the limits of the UST excavation and from six (6) push probe soil borings.

- Soil samples were analyzed for total petroleum hydrocarbons using NWTPH-HCID, gasoline-range TPH by NWTPH-Gx and BTEX constituents using EPA Method 8021B.

- Groundwater samples were analyzed by NWTPH-Gx, selected gasoline-range VOCs by EPA Method 8260B, PAHs by EPA Method 8270SIM, and dissolved lead using EPA Method 6000/7000 Series Methods.

- Soil and groundwater analytical results were evaluated against the generic RBCs established in DEQ's *Risk-Based Decision-Making for the Remediation of Petroleum-Contaminated Sites*, dated September 22, 2003 for each of the applicable exposure pathways and receptors. The detected CoC concentrations

in "worse-case" soil sample P-2@4.5' and "worse-case" groundwater sample from push probe P-2 did not exceed any of the applicable RBCs.

- One (1) groundwater sample collected from standing water in the abandoned UST excavation contained gasoline-range TPH at a concentration of 31,300 µg/L and benzene at a concentration of 2,700 ug/L. These two (2) constituents exceed the RBC for *Groundwater in and Excavation* for the Excavation and Construction worker scenarios. The standing water in the excavation could not be adequately pumped from the excavation prior to sampling, and therefore consisted predominantly of undiluted liquids from the abandoned UST and accumulated groundwater in the base of the excavation. Due to the limited volume of this fluid, the analytical results are not considered to represent actual groundwater concentrations and are not considered to pose an unacceptable risk to the excavation or construction worker in the future.

Recommendations

Based on the results of soil and groundwater site investigations, the completion of a CSM, and evaluation of soil and groundwater data to applicable pathways of exposure and receptor populations, the March 31, 2008 release of hydrocarbons from an abandoned UST does not appear to have resulted in unacceptable human health risk. BB&A believes that all applicable response, abatement, site characterization, and investigation requirements in OAR 340-122-205 through 340-122-240 have been completed, and the site meets the requirements of OAR 340-122-244 through 340-122-250 for completing risk-based cleanups. If DEQ agrees with this assessment, BB&A requests that LUST 29-08-0695 be issued a No Further Action.

Limitations

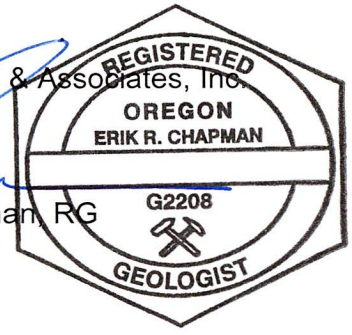
Professional services provided by BB&A have been performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental research and consulting firms practicing in this or similar localities. No other warranty, express or implied, is made as to the professional advice included in this report.

No investigation is thorough enough to ensure that no contamination is present on a particular property or in a particular area. The analyses of the samples collected only indicates the presence or absence of contaminants in those discrete sample locations. Based on our experience with similar investigations, and within the limits of the scope of

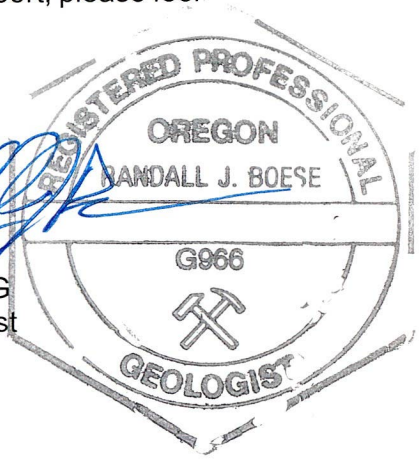
work and budget constraints of this project, the samples were collected from areas most likely to be impacted by potential contamination. However, the results from the collected samples should only be considered as an indicator of subsurface conditions and not as a guarantee of the absence of contaminants in areas not sampled.

Should you have any questions regarding the information presented in this report, please feel free to contact us at (503) 570-9484.

Sincerely,
Bergeson-Boese & Associates, Inc.



Erik R.D. Chapman, RG
Project Manager

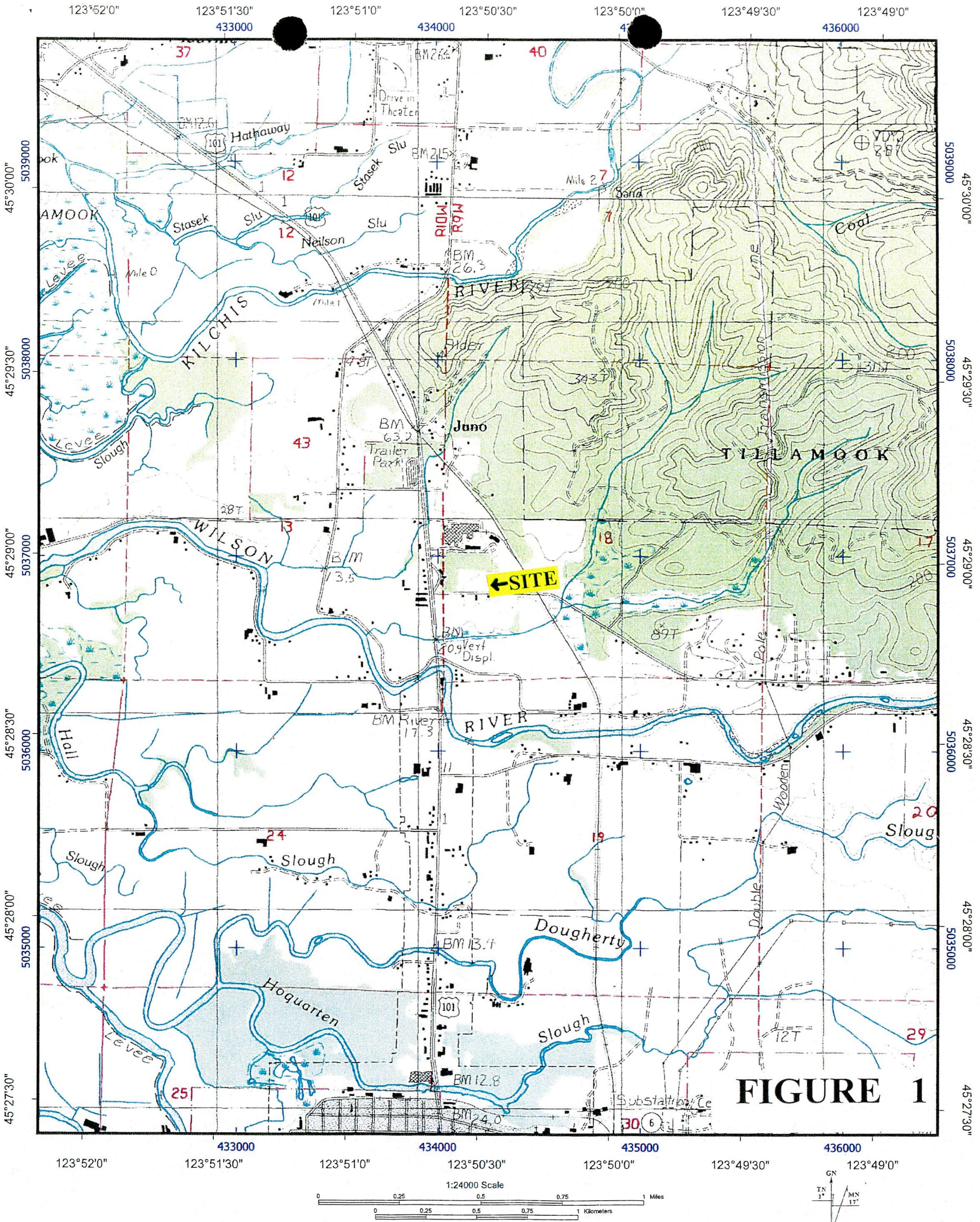


Randall J. Boese, RG
Senior Hydrogeologist

Attachment A: Figures
Attachment B: Push Probe Logs
Attachment C: Laboratory Report

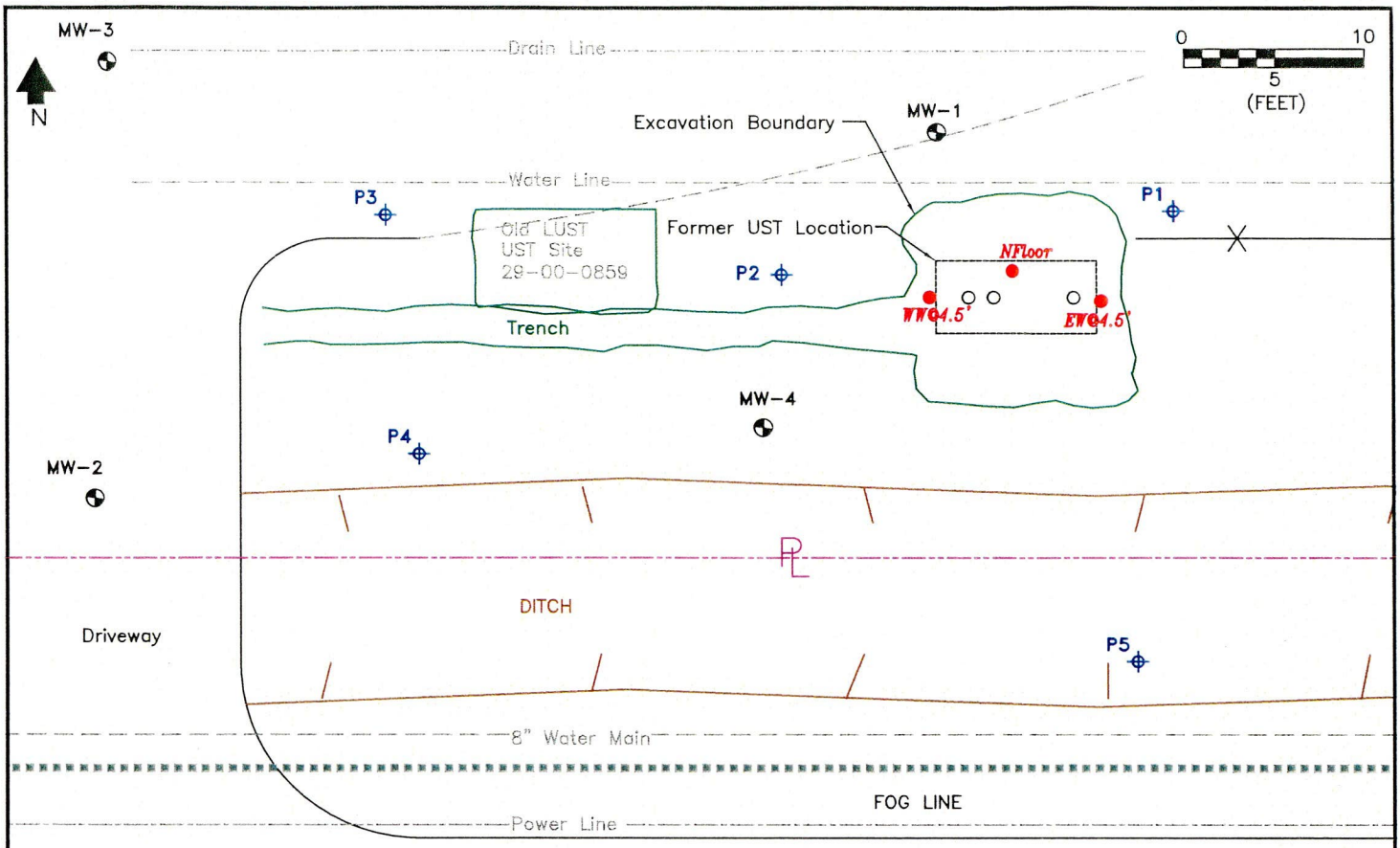
ATTACHMENT A

Figures



123°52'0"
123°51'30"
123°51'0"
123°50'30"
123°50'0"
123°49'30"
123°49'0"
433000
434000
435000
436000
5039000
5038000
5037000
5036000
5035000
45°30'00"
45°29'30"
45°29'00"
45°28'30"
45°28'00"
45°27'30"
←SITE
Juno
Trailer Park
Drive in Theater
Hathaway
Stasek Slu
Neilson Slu
KILCHIS RIVER
WILSON RIVER
TILLAMOOK
Dougherty Slough
Hoquarten Slough
Hall Slough
Coal
Alder
Levee
Double Wooden Pole Transmission Line
Substation
R10W
R9W
101
1:24000 Scale
Miles
Kilometers
Universal Transverse Mercator (UTM) Projection Zone10
North American Datum of 1983 (NAD83)
UTM Grid shown in Blue
Magnetic declination at center of map on June 27, 2008

FIGURE 1



OLD LATIMER ROAD

LEGEND

P2 — Proposed Push Probe Location and Identification Number

WWG4.5' — Confirmation Soil Sample Location and Identification Number

MW-1 — Former Monitoring Well Location and Identification Number (LUST 29-00-0859)

Property Line

Fence

P6

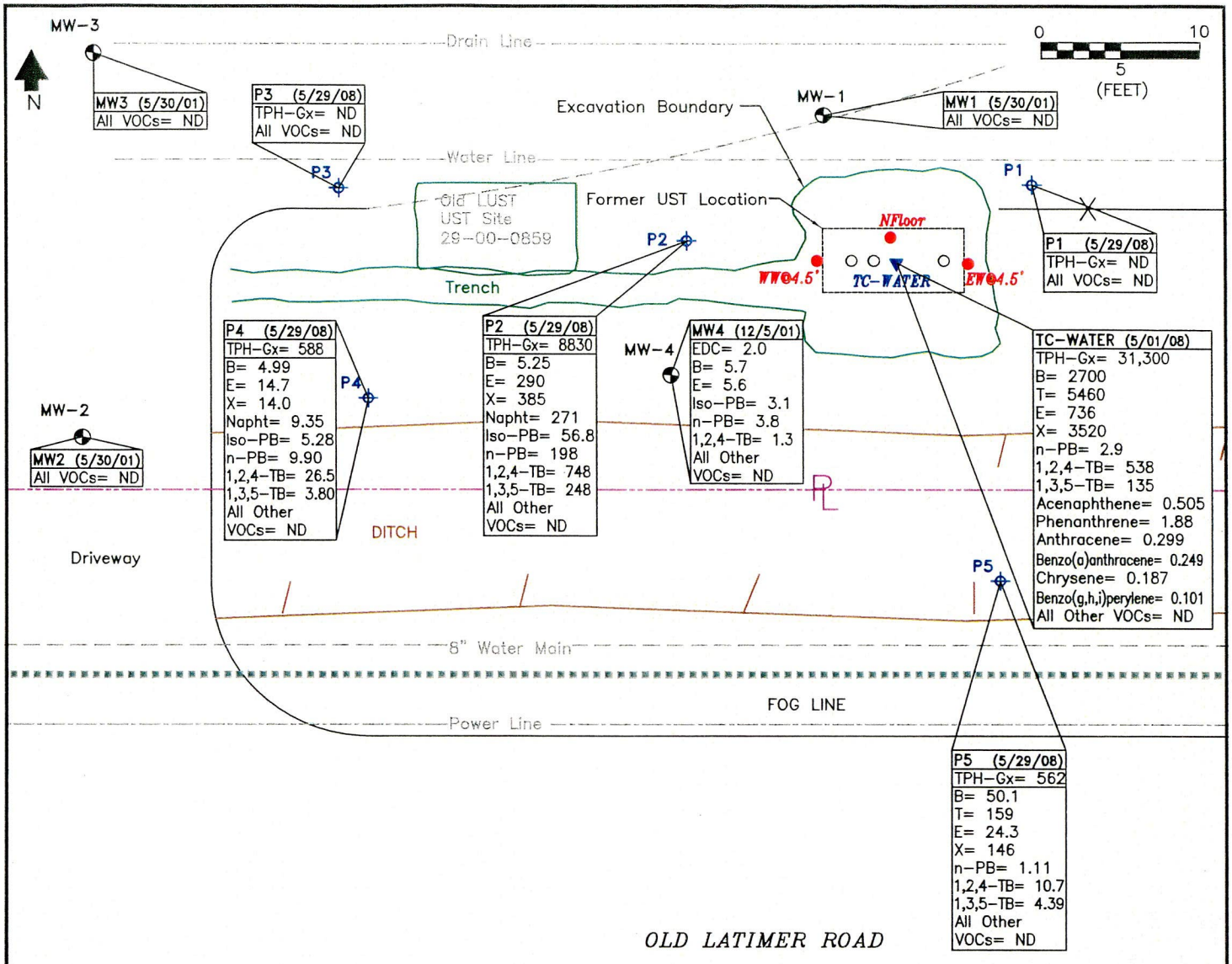
FIGURE 2

TILLAMOOK CREAMERY, 4185 Highway 101 N., Tillamook, OR

SITE PLAN

Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services
32986 Roberts Court
Coburg, Oregon 97408
(541) 484-9484
25195 SW Parkway Ave., Suite207
Wilsonville, Oregon 97070
(503) 570-9484

Job Code:	TC02ISC.08UC
CADD File:	TC02ISC.08UC
Scale:	1"=10'
Drawn:	KATHRYN DAVIS DESIGNS
Checked:	ERIK CHAPMAN
Date:	09/12/08



LEGEND

P5 (5/29/08)
TPH-Gx= 562
B= 50.1
T= 159
E= 24.3
X= 146
n-PB= 1.11
1,2,4-TB= 10.7
1,3,5-TB= 4.39
All Other
VOCs= ND

Total Petroleum Hydrocarbons per NWTPH-Gx, units in parts per million (ppm);
Volatile Organic Compounds (VOCs) per EPA Method 8260B, units in parts per billion (ppb); ND= Not Detected

P2 — Proposed Push Probe Location and Identification Number

WW@4.5' — Confirmation Soil Sample Location and Identification Number

MW-1 — Former Monitoring Well Location and Identification Number (LUST 29-00-0859)

PL — Property Line

Fence

P6 (8/13/08)
TPH-Gx= ND
All VOCs= ND
P6

FIGURE 3

TILLAMOOK CREAMERY, 4185 Highway 101 N., Tillamook, OR

SITE PLAN SHOWING GROUNDWATER ANALYTICAL RESULTS

Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services
32986 Roberts Court
Coburg, Oregon 97408
(541) 484-9484
25195 SW Parkway Ave., Suite207
Wilsonville, Oregon 97070
(503) 570-9484

Job Code:	TC02ISC.08UC
CADD File:	TC02ISC.08UC
Scale:	1"=10'
Drawn:	KATHRYN DAVIS DESIGNS
Checked:	ERIK CHAPMAN
Date:	09/11/08

ATTACHMENT B

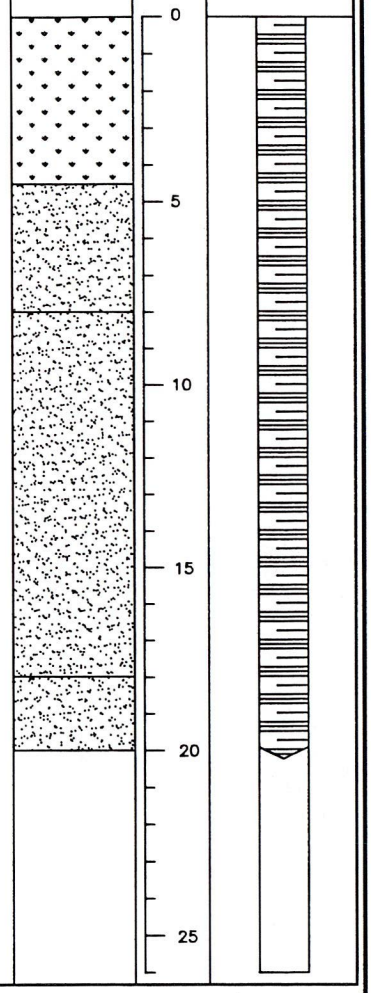
Push-Probe Boring Logs

PROBE LOG

PROBE NO.: P6
PROJECT CODE: TC02ISC.08UC
CADD FILE: TC02ISC.08UC
PROJECT: TILLAMOOK CREAMERY
LOCATION: 2500 LATIMER ROAD
TILLAMOOK, OR

TOTAL DEPTH: 20'
SURFACE ELEVATION: N/A
PROBING METHOD: MACRO CORE
PROBED BY: PACIFIC NORTHWEST DRILLING
LOGGED BY: ERIK CHAPMAN
DATE COMPLETED: 8/13/08

DEPTH (feet)	SAMPLE IDENTIFICATION AND LAB RESULTS	PID	H_2O LEVEL	LITHOLOGIC DESCRIPTION
0				SOIL SURFACE
	TC02-P6-4.5'			Clayey SILT (ML): light grey w/ orange mottles, dry, firm
5				
	TC02-P6-6.5'			SILT (ML): orange& grey, soft, dry
10	TC02-P6-10'			
	TC02-P6-13'			moist at 13'BLS
	TC02-P6-14.5'			
15			WD	
				Sandy SILT (ML): dark grey, very fine-grained sand, wet, soft, no hydrocarbon odor
20				
25				



LEGEND

WD Water Level in borehole during drilling (i.e. first encountered)

NOTES: _____

NOTE: CLASSIFICATION OF SOILS BASED ON THE UNITED SOILS CLASSIFICATION SYSTEM.

Bergeson-Boese + Associates, Inc.
Comprehensive Environmental Services

32986 Roberts Court
Coburg, Oregon 97408
(541) 484-9484

25195 SW Parkway Ave., Suite 207
Wilsonville, Oregon 97070
(503) 570-9484

ATTACHMENT C

Laboratory Report and
Chain-of-Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210
ORELAP#: OR100021

August 27, 2008

Erik Chapman
Bergeson, Boese and Associates-Wilsonville
25195 SW Parkway Ave Suite 207
Wilsonville, OR 97070

RE: Tillamook Creamery

Enclosed are the results of analyses for samples received by the laboratory on 08/14/08 10:45. The following list is a summary of the Work Orders contained in this report, generated on 08/27/08 13:59.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
PRH0481	Tillamook Creamery	TC021SC.080C

TestAmerica Portland

Christina M. Woodcock

Christina Woodcock For Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND
9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	08/27/08 13:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
081308-P6-H2O	PRH0481-06	Water	08/13/08 10:30	08/14/08 10:45

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTL[redacted]
9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	08/27/08 13:59

Gasoline Hydrocarbons per NW TPH-Gx Method

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PRH0481-06 (081308-P6-H2O)			**Water**			**Sampled: 08/13/08 10:30**				
Gasoline Range Hydrocarbons	NW TPH-Gx	ND	-----	80.0	ug/l	1x	8080503	08/15/08 13:12	08/16/08 02:02	
Surrogate(s): 4-BFB				*99.7%*		*50 - 150 %*	"			"

TestAmerica Portland

Christina M. Woodcock

Christina Woodcock For Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTL
9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	08/27/08 13:59

Selected Volatile Organic Compounds (Including BTEX) per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PRH0481-06 (081308-P6-H2O)			**Water**			**Sampled: 08/13/08 10:30**				
1,2-Dibromoethane	EPA 8260B	ND	-----	0.500	ug/l	1x	8080577	08/19/08 09:00	08/19/08 17:14	
1,2-Dichloroethane	"	ND	-----	0.500	"	"	"	"	"	
Benzene	"	ND	-----	0.200	"	"	"	"	"	
Toluene	"	ND	-----	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	-----	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	-----	1.00	"	"	"	"	"	
Methyl tert-butyl ether	"	ND	-----	2.00	"	"	"	"	"	
Naphthalene	"	ND	-----	2.00	"	"	"	"	"	
1,2,4-Trimethylbenzene	"	ND	-----	1.00	"	"	"	"	"	
1,3,5-Trimethylbenzene	"	ND	-----	0.500	"	"	"	"	"	
Isopropylbenzene	"	ND	-----	2.00	"	"	"	"	"	
n-Propylbenzene	"	ND	-----	0.500	"	"	"	"	"	
Surrogate(s): *4-BFB*				*102%*		*80 - 120 %*	"			"
1,2-DCA-d4				*111%*		*80 - 120 %*	"			"
Dibromofluoromethane				*107%*		*80 - 120 %*	"			"
Toluene-d8				*99.8%*		*80 - 120 %*	"			"

TestAmerica Portland

Christina M. Woodcock

Christina Woodcock For Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	08/27/08 13:59

Gasoline Hydrocarbons per NW TPH-Gx Method - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8080503 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8080503-BLK1)								**Extracted: 08/15/08 13:12**						
Gasoline Range Hydrocarbons	NW TPH-Gx	ND	---	80.0	ug/l	1x	--	--	--	--	--	--	08/15/08 20:58	
Surrogate(s): 4-BFB		*Recovery: 106%*			*Limits: 50-150%*	"							*08/15/08 20:58*	
LCS (8080503-BS2)								**Extracted: 08/15/08 13:12**						
Gasoline Range Hydrocarbons	NW TPH-Gx	442	---	80.0	ug/l	1x	--	500	88.4%	(70-130)	--	--	08/15/08 20:03	
Surrogate(s): 4-BFB		*Recovery: 112%*			*Limits: 50-150%*	"							*08/15/08 20:03*	
LCS Dup (8080503-BSD2)								**Extracted: 08/15/08 13:12**						
Gasoline Range Hydrocarbons	NW TPH-Gx	497	---	80.0	ug/l	1x	--	500	99.4%	(70-130)	11.7%	(35)	08/15/08 20:30	
Surrogate(s): 4-BFB		*Recovery: 117%*			*Limits: 50-150%*	"							*08/15/08 20:30*	
Duplicate (8080503-DUP1)						**QC Source: PRH0475-03**		**Extracted: 08/15/08 13:12**						
Gasoline Range Hydrocarbons	NW TPH-Gx	1780	---	800	ug/l	10x	1750	--	--	--	2.12%	(35)	08/16/08 05:43	
Surrogate(s): 4-BFB		*Recovery: 109%*			*Limits: 50-150%*	*1x*							*08/16/08 05:43*	
Duplicate (8080503-DUP2)						**QC Source: PRH0476-01**		**Extracted: 08/15/08 13:12**						
Gasoline Range Hydrocarbons	NW TPH-Gx	2360	---	800	ug/l	10x	2240	--	--	--	5.43%	(35)	08/16/08 04:48	
Surrogate(s): 4-BFB		*Recovery: 116%*			*Limits: 50-150%*	*1x*							*08/16/08 04:48*	

TestAmerica Portland

Christina M. Woodcock

Christina Woodcock For Darrell Auvil, Project Manager

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	08/27/08 13:59

Selected Volatile Organic Compounds (Including BTEX) per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8080577 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8080577-BLK1)								**Extracted: 08/19/08 09:00**						
1,2-Dibromoethane	EPA 8260B	ND	---	0.500	ug/l	1x	--	--	--	--	--	--	08/19/08 14:05	
1,2-Dichloroethane	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Benzene	"	ND	---	0.200	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Methyl tert-butyl ether	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
1,2,4-Trimethylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,3,5-Trimethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Isopropylbenzene	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
n-Propylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 107%*			*Limits: 80-120%*	"							*08/19/08 14:05*	
1,2-DCA-d4		*109%*			*80-120%*	"							"	
Dibromofluoromethane		*108%*			*80-120%*	"							"	
Toluene-d8		*98.2%*			*80-120%*	"							"	
LCS (8080577-BS1)								**Extracted: 08/19/08 09:00**						
1,2-Dibromoethane	EPA 8260B	20.4	---	0.500	ug/l	1x	--	20.0	102%	(80-140)	--	--	08/19/08 11:54	
1,2-Dichloroethane	"	21.6	---	0.500	"	"	--	"	108%	(75-135)	--	--	"	
Benzene	"	21.7	---	0.200	"	"	--	"	109%	(80-120)	--	--	"	
Toluene	"	20.9	---	0.500	"	"	--	"	104%	(80-125)	--	--	"	
Ethylbenzene	"	22.5	---	0.500	"	"	--	"	112%	(80-130)	--	--	"	
Xylenes (total)	"	66.3	---	1.00	"	"	--	60.0	111%	"	--	--	"	
Methyl tert-butyl ether	"	20.9	---	2.00	"	"	--	20.0	104%	(80-135)	--	--	"	
Naphthalene	"	20.6	---	2.00	"	"	--	"	103%	(60-150)	--	--	"	
1,2,4-Trimethylbenzene	"	23.7	---	1.00	"	"	--	"	118%	(75-125)	--	--	"	
1,3,5-Trimethylbenzene	"	23.7	---	0.500	"	"	--	"	119%	(75-135)	--	--	"	
Isopropylbenzene	"	22.1	---	2.00	"	"	--	"	110%	(80-140)	--	--	"	
n-Propylbenzene	"	23.4	---	0.500	"	"	--	"	117%	(80-130)	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 106%*			*Limits: 80-120%*	"							*08/19/08 11:54*	
1,2-DCA-d4		*108%*			*80-120%*	"							"	
Dibromofluoromethane		*107%*			*80-120%*	"							"	
Toluene-d8		*99.9%*			*80-120%*	"							"	

TestAmerica Portland

Christina M. Woodcock

Christina Woodcock For Darrell Auvil, Project Manager

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	08/27/08 13:59

Selected Volatile Organic Compounds (Including BTEX) per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8080577 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS Dup (8080577-BSD1)							**Extracted: 08/19/08 09:00**							
1,2-Dibromoethane	EPA 8260B	21.6	---	0.500	ug/l	1x	--	20.0	108%	(80-140)	5.52%	(25)	08/19/08 12:55	
1,2-Dichloroethane	"	23.1	---	0.500	"	"	--	"	116%	(75-135)	6.53%	"	"	
Benzene	"	23.3	---	0.200	"	"	--	"	117%	(80-120)	7.19%	"	"	
Toluene	"	22.8	---	0.500	"	"	--	"	114%	(80-125)	8.57%	"	"	
Ethylbenzene	"	25.8	---	0.500	"	"	--	"	129%	(80-130)	13.9%	"	"	
Xylenes (total)	"	76.5	---	1.00	"	"	--	60.0	128%	"	14.3%	"	"	
Methyl tert-butyl ether	"	22.1	---	2.00	"	"	--	20.0	111%	(80-135)	5.76%	"	"	
Naphthalene	"	20.8	---	2.00	"	"	--	"	104%	(60-150)	0.868%	"	"	
1,2,4-Trimethylbenzene	"	26.6	---	1.00	"	"	--	"	133%	(75-125)	11.5%	"	"	L
1,3,5-Trimethylbenzene	"	27.3	---	0.500	"	"	--	"	136%	(75-135)	14.0%	"	"	L
Isopropylbenzene	"	26.0	---	2.00	"	"	--	"	130%	(80-140)	16.1%	"	"	
n-Propylbenzene	"	26.7	---	0.500	"	"	--	"	133%	(80-130)	13.3%	"	"	L
Surrogate(s): 4-BFB		*Recovery: 109%*			*Limits: 80-120%*	"							*08/19/08 12:55*	
1,2-DCA-d4		*103%*			*80-120%*	"							"	
Dibromofluoromethane		*108%*			*80-120%*	"							"	
Toluene-d8		*100%*			*80-120%*	"							"	

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Christina M. Woodcock

Christina Woodcock For Darrell Auvil, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	08/27/08 13:59

Notes and Definitions

Report Specific Notes:

L - Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not detected, data not impacted.

Laboratory Reporting Conventions:

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR/NA - Not Reported / Not Available

dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.

wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.

RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.

Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*. Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Portland

Christina M. Woodcock

Christina Woodcock For Darrell Auvil, Project Manager

TestAmerica
ANALYTICAL TESTING CORPORATION

[illegible] North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
[illegible] E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
[illegible] Suite 320, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PRH0481

CLIENT: Bergeson - Boese

REPORT TO: Erik Chapman / BBA
ADDRESS: 25195 SW Parkway Ave, Wilsonville, OR

PH/FAX: 503 570 9481 /

INVOICE TO: Coburg Office - Ron Bergeson

P.O. NUMBER: 1251 - 08 - W

PROJECT NAME: Tillamook Creamery

PROJECT NUMBER:

SAMPLED BY: Erik Chapman

PRESERVATIVE

REQUESTED ANALYSES

TPH-Dx NWTPH-Dx
BTEX 8260B
RCRA VOCs

TURNAROUND REQUEST
in Business Days *

Organic & Inorganic Analyses
10 STD | 7 | 5 | 4 | 3 | 2 | 1 | < 1

Petroleum Hydrocarbon Analyses
X STD | 4 | 3 | 2 | 1

OTHER Specify

* Turnaround Requests less than standard may incur Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE	TIME	TPH-Dx	BTEX 8260B	RCRA VOCs	MATRIX (W, S, O)	# OF CONT.	LOCATION COMMENTS	TA WO ID
1	081308-P6-4.5	8/13/08	0947				S	1		
2	081308-P6-6.5		0950				S	1		
3	081308-P6-10		0955				S	1		
4	081308-P6-13		0957				S	1		
5	081308-P6-14.5		1000				S	1		
6	081308-P6-H20		1030	X	X		W	9		
7										
8										
9										
10										

RELEASED BY: [signature]
PRINT NAME: Erik Chapman FIRM: BBA DATE: 8/13/08 TIME: 1407
RECEIVED BY: [signature]
PRINT NAME: Bob F FIRM: TAP DATE: 8/14/8 TIME: 10:22

RELEASED BY: [signature]
PRINT NAME: Bob F FIRM: TAP DATE: 8/14/8 TIME: 10:45
RECEIVED BY: [signature]
PRINT NAME: KAREN WILSON FIRM: TA-P DATE: 8-14-08 TIME: 10:45

ADDITIONAL REMARKS:

TEMP: 4.7

COC REV 09/2004

TestAmerica Sample Receipt Checklist

Received by: *(section A)* Date: 8-14-08 Time: 10:45 Initials: K

Unpacked by: *(section B)* Date: 8-14-08 Initials: K

Logged-in by: Date: 8/14/08 Initials: BME

Work Order No. PRH0481

Client: BBA - Wilsonville

Project: Tillamook Creamery

Temperature out of range:

***ESI Clients *(see Section C)*

Cooler Temperature (IR): 4.7 °C (plastic) glass NA *(oil/air samples, ESI client)*

Digi #1

Digi #2

Temperature Blank: _____ °C

___Not enough Ice
___No Ice
___Ice Melted
___W/in 4 Hours
___Other:_____

A

Custody Seals: (#___)

Signature: Y N Dated:_____

X None

Container Type:

1 #Cooler(s)

___#Box(s)

___None (___#Other:_____)

Coolant Type:

___Gel Ice

X Loose Ice

___None

Packing Material:

___Bubble Bags

___Styrofoam Cubbies

___Peanuts

X None (___Other:_____)

Received from:

X TA Courier

___Senvoy

___UPS

___Fed Ex

___Client

___TDP

___DHL

___SDS

___Mid-Valley

___GS/TA

___GS/Senvoy

___Other:

_____

B

Sample Status:
(If N circled, see NOD)

General:

Intact?	(Y)	N	
# Containers Match COC?	Y	(N)	none given
IDs Match COC?	Y	(N)	

For Analyses Requested:

Cyanide Checked?	Y	N	(NA)
Correct Type & Preservation?	(Y)	N	
Adequate Volume?	(Y)	N	
Within Hold Time?	(Y)	N	

Volatiles/ Oil Quality:

VOAs/ Syringes free of Headspace?	(Y)	N	NA
TB on COC? (not provided)	Y	N	NA

Metals:

HNO3 Preserved?	(Y)	N	NA
Dissolved Metals Filtered?	Y	N	(NA)

C

***ESI Clients Only:

Temperature Blank: _____ °C not provided

All preserved bottles checked Y N NA *(voas/soils/all unp.)*

All preserved accordingly? Y N *(see NOD)* NA *(voas/soils/all unp.)*

FED EX/ UPS: Was the tracking paper keepable? YES NO

If circled NO, what is the Tracking number? _____

FED EX Goldstreak UPS DHL Other: _____

Project Managers:

Comments: _____

PM Reviewed: _____ *(Initial/Date)*

Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services

Eugene Office
32986 Roberts Court
Coburg, Oregon 97408

P.O. Box 71158
Eugene, Oregon 97401

(541) 484-9484
Fax (541) 484-4188

Portland Office
25195 SW Parkway Ave.
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Wilsonville, Oregon 97070

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Fax (503) 570-0384

www.bergeson-boese.com

CCB# 76509
WACCR# BERGEBA036PC

July 29, 2008

Department of Environmental Quality
Northwest Region
2020 SW Fourth Street, Suite 400
Portland, OR 97201-4987

Re: Investigation of Magnitude and Extent of Contamination
Tillamook Creamery
4185 Highway 101 North
Tillamook, Oregon 97141
DEQ Facility I.D. No. 4347
LUST No. 29-08-0695

Dear Sir/Madam:

Bergeson-Boese & Associates, Inc. (BB&A) has completed additional investigation work at the above-referenced site. The results of this investigation are presented for your review in the enclosed report titled "Investigation for Magnitude and Extent of Contamination and Conceptual Site Model", dated July 29,2008.

Should you have any questions regarding the information presented in this report, please feel free to contact us at (503) 570-9484.

Sincerely,
Bergeson-Boese & Associates, Inc.

Erik R.D. Chapman, RG
Project Manager

Enclosure

CC: Mr. Shawn Reiersgaard, Tillamook County Creamery Association

Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services

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Coburg, Oregon 97408

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CCB# 76509
WACCR# BERGEBA036PC

June 27, 2008

Department of Environmental Quality
Northwest Region
2020 SW Fourth Street, Suite 400
Portland, OR 97201-4987

Re: Twenty-Day Report Form for UST Cleanup Project
Tillamook Creamery
4185 Highway 101 North
Tillamook, Oregon 97141
DEQ Facility I.D. No. 4347
LUST No. 29-08-0695

Dear Sir/Madam:

Bergeson-Boese & Associates, Inc. (BB&A) has completed a Twenty-Day Report Form for UST Cleanup Project 29-08-0695, located the referenced address. A completed Twenty-Day Report Form is included in **Attachment 1**. A map illustrating the site location and a site plan showing initial soil and pit water sample locations are presented in **Attachment 2, Figures 1 and 2**. A laboratory report of soil and pit water samples collected during the initial assessment is provided in **Attachment 3**.

Should you have any questions regarding the information presented in this report, please feel free to contact us at (503) 570-9484.

Sincerely,
Bergeson-Boese & Associates, Inc.

Erik R.D. Chapman, RG
Project Manager

Attachment 1: Twenty-Day Report Form for UST Cleanup Projects
Attachment 2: Figures
Attachment 3: Laboratory Report

CC: Mr. Shawn Reiersgaard, Tillamook County Creamery Association

ATTACHMENT 1

Twenty-Day Report Form for UST Cleanup Projects

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
UNDERGROUND STORAGE TANK PROGRAM

State of Oregon Department of Environmental Quality

Initial (Twenty Day) Report Form for UST Cleanup Projects

This report is due twenty (20) days from the date of the release.

DEQ USTC File No. 29-08-0695

DEQ Facility ID No. 4347

Site Name: Tillamook County Creamery Association

Site Address: 4185 Highway 101 North, Tillamook, Oregon

DEPT OF ENVIRONMENTAL QUALITY RECEIVED
JUN 30 2008
NORTHWEST REGION

INITIAL CLEANUP INFORMATION

(1) Type of contamination (check √ all that apply):

☑ Gasoline ☐ Diesel ☐ Waste Oil ☐ Heating Oil

☐ Other (specify) _____

(2) Estimate quantity of release (based on information known to date – ● select only one):

◉ <100 gal. ○ 100-499 gal. ○ 500-999 gal. ○ 1,000-5,000 gal. ○ >5,000 gal.

SITE INFORMATION (check √ yes or √ no)

(3) ☑ Y ☐ N Did any water enter the excavation? If yes, please describe and identify the depth to groundwater in feet below ground surface: Groundwater in pit at 4.5 to 5.0 feet below ground surface

(4) ☑ Y ☐ N Was a sheen or odor observed on any water in the excavation?

Note: If groundwater is encountered, soil samples from the soil/water interface must be collected and analyzed for BTEX and by the appropriate TPH method.

At sites where diesel or other non-gasoline products have been released, the water may also have to be screened or tested for polynuclear aromatic hydrocarbons (PAHs). *Please refer to OAR 340-122-0218.*

(5) ☐ Y ☑ N Was water pumped from the excavation?

☐ Y ☐ N If yes, did groundwater recharge within 24 hours after pumping?

Please describe the pumping procedure and disposal option selected for the purged excavation water:

(6) ☑ Y ☐ N Were any water samples collected from the excavation? If yes, please describe:

(7) ☑ Y ☐ N Have any soil and/or water sample results been received at this time?

If so, please attach any lab reports.

IF GROUNDWATER HAS BEEN ENCOUNTERED, PLEASE ANSWER QUESTIONS #8-13, BELOW.
IF NO WATER HAS BEEN ENCOUNTERED, PLEASE SKIP TO QUESTION #14

(8) What are the known uses of groundwater within a 500-foot radius of the release site (check √ all that apply)?

☑ non-use ☐ industrial ☐ agricultural ☐ drinking supply

(9) If groundwater in this area is being used as a drinking water supply, please check √ the type and size of population served by the supply:

☐ Community (community well used for drinking water year round – • select only one)

size: ○ <1,000 people ○ 1,000 - 5,000 people ○ >5,000 people

☐ Intermittent use (public water used for drinking water only on a part-time basis – • select only one)

size: ○ <50 people ○ 50 - 300 people ○ > 300 people

☐ Private wells (individual private well or wells used for drinking water – • select only one)

size: ○ <10 people ○ 10 - 25 people ○ >25 people

(10) ☐ Y ☑ N Is there any evidence this water supply has been or is likely to be impacted from the petroleum product release? If yes, estimate how difficult it would be to replace the existing supply:

☐ bottled water is the only alternative

☐ on-site water treatment; bulk water delivery; new wells are available

☐ able to connect to existing water supply

☐ do not know what alternatives would be available

(11) ☐ Y ☑ N Are/were vapors present in on-site or nearby buildings? If yes:

A. Are you monitoring and/or mitigating any potential fire and safety hazards posed by vapors and free product? Explain: _____

B. Estimate the number of people potentially affected by vapors – • select only one:

○ 1-2 people ○ 3-10 people ○ >10 people

(12) ☐ Y ☑ N Are vapors or is petroleum contamination present in the utility corridors?

If yes, please explain: _____

(13) ☑ Y ☐ N Are natural areas located within 1/4 mile of the site? If so, please describe types (parks, rivers, wetlands, sensitive habitats, *etc.*) and proximity: _____

An unnamed creek is located approximately 0.25 miles south of the site.

(14) ☐ Y ☑ N If groundwater was not encountered in the excavation, do you believe that this cleanup project can be conducted under the requirements for an UST Cleanup Matrix site? If yes, then refer to OAR 340-122-0305 through 0360.

AREA/SITE CONDITIONS:

(15) Mean annual rainfall: ○ <20 inches ○ 20-45 inches ◉ >45 inches

(16) Soil type(s) of the naturally occurring soils, not the backfill around the tank – • select only one:

○ clays, compact tills, shales, and unfractured metamorphic and igneous rocks

◉ sandy loams, loamy sands, silty clays, clay loams, moderately permeable limestone, dolomite, sandstones, moderately fractured igneous and metamorphic rock

○ fine and silty sands, sands and gravels, highly fractured igneous and metamorphic rock, permeable basalts and lavas, karst limestones and dolomites

SOIL MANAGEMENT

(17) If soil sample results have been received:

☐ Y ☑ N Will the level of contamination detected require removal of contaminated soil for treatment or disposal?

(18) All contaminated soil temporarily stockpiled on-site prior to treatment or disposal must be contained within a bermed area, kept covered, and the entire area secured to prevent unauthorized access by the public. If you haven't done this, please explain why:

Note: It is a violation to stockpile petroleum contaminated soil (PCS) on-site for greater than 30 days without a DEQ Solid Waste Letter Authorization (SWLA) Permit.

(19) If contaminated soil is currently stockpiled on-site, please indicate when disposal will occur or when treatment will begin: _____

(20) Estimated volume of contaminated soil (specify tons or cubic yards): _____

(21) Intended disposition of soils (please • select only one):

○ On-site/off-site treatment, Solid Waste Letter Authorization Permit Application attached.

○ Thermal treatment off-site at an authorized facility.
Facility name: _____

○ Landfill disposal.
Name of Landfill: _____

Note: Please attach additional information as necessary to explain any unusual circumstances associated with this project.

This initial report is intended to provide the Department with the basic initial information about activities associated with the release. Future reports should provide a more detailed and complete picture of the cleanup project.

Please be aware that a DEQ permit/authorization is required for the following activities:

1) Soil aeration, bioremediation (on-site or off-site), or on-site thermal treatment.

2) Water discharges to a stream/storm drain from the excavation or treatment tank.

If these activities will be included in your cleanup project, contact the regional DEQ office for the appropriate application forms, information on permit fees and guidance documents.

THIS REPORT WAS PREPARED BY:

Individual: Erik R.D. Chapman RG Date: 6/26/08

Company: Bergeson-Boese & Associates Phone: (503)570-9484 ext 13

Address: 25195 SW Parkway Avenue, Suite 207

City: WILSONVILLE State OR Zip 97070

1. Please return this form to the regional office in which the site is located. If you have questions, call the contact person in your regional office.

2. For all tanks, except heating oil tanks, you must submit an *UST Decommissioning Checklist and Site Assessment Report* to the appropriate regional office within 30 days of the UST decommissioning. Failure to do so can result in delays to your project and may result in continued billing for the annual tank permit fees.

3. Addresses and phone numbers for the regional offices can be found in the *UST Cleanup Manual* or viewed and downloaded from this DEQ Webpage: http://www.deq.state.or.us/about/locations.htm

4. Copies of the *UST Cleanup Manual* and other UST program forms and checklists can be viewed and downloaded from DEQ's Website: http://www.deq.state.or.us/lq/tanks/ust/index.htm

or in the Portland area by calling Steve Paiko at 503-229-6652

or outside the Portland area leaving a message on the UST Help Line (toll-free in Oregon) at 1-800-742-7878

KEEP A COPY OF THIS REPORT FOR YOUR FACILITY RECORDS

ATTACHMENT 2

Figures

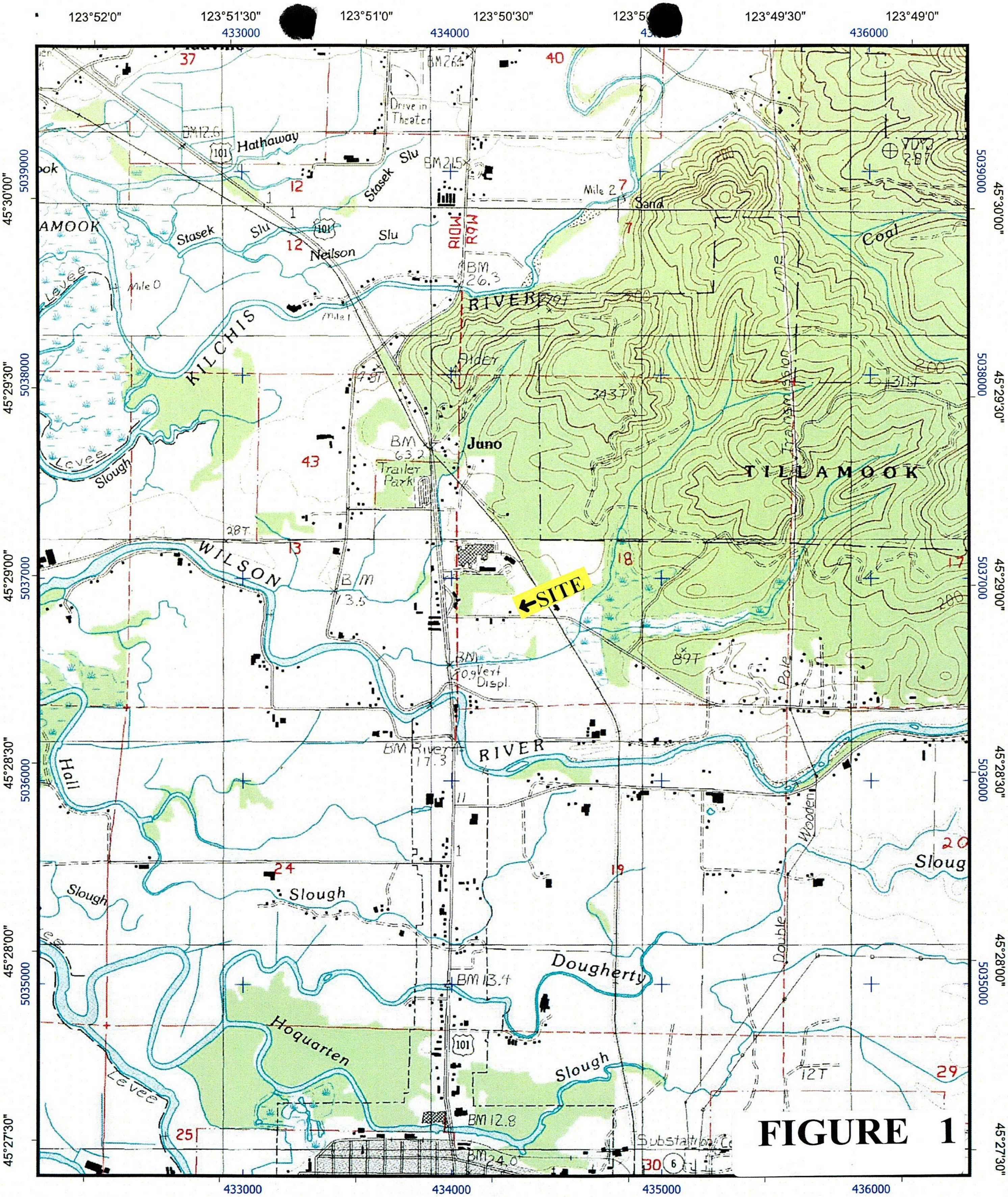

FIGURE 1

1:24000 Scale

0 | 0.25 | 0.5 | 0.75 | 1 Miles

0 | 0.25 | 0.5 | 0.75 | 1 Kilometers

Universal Transverse Mercator (UTM) Projection Zone10
North American Datum of 1983 (NAD83)

UTM Grid shown in Blue

GN
TN 1°
MN 17°

Magnetic declination at center of map on June 27, 2008

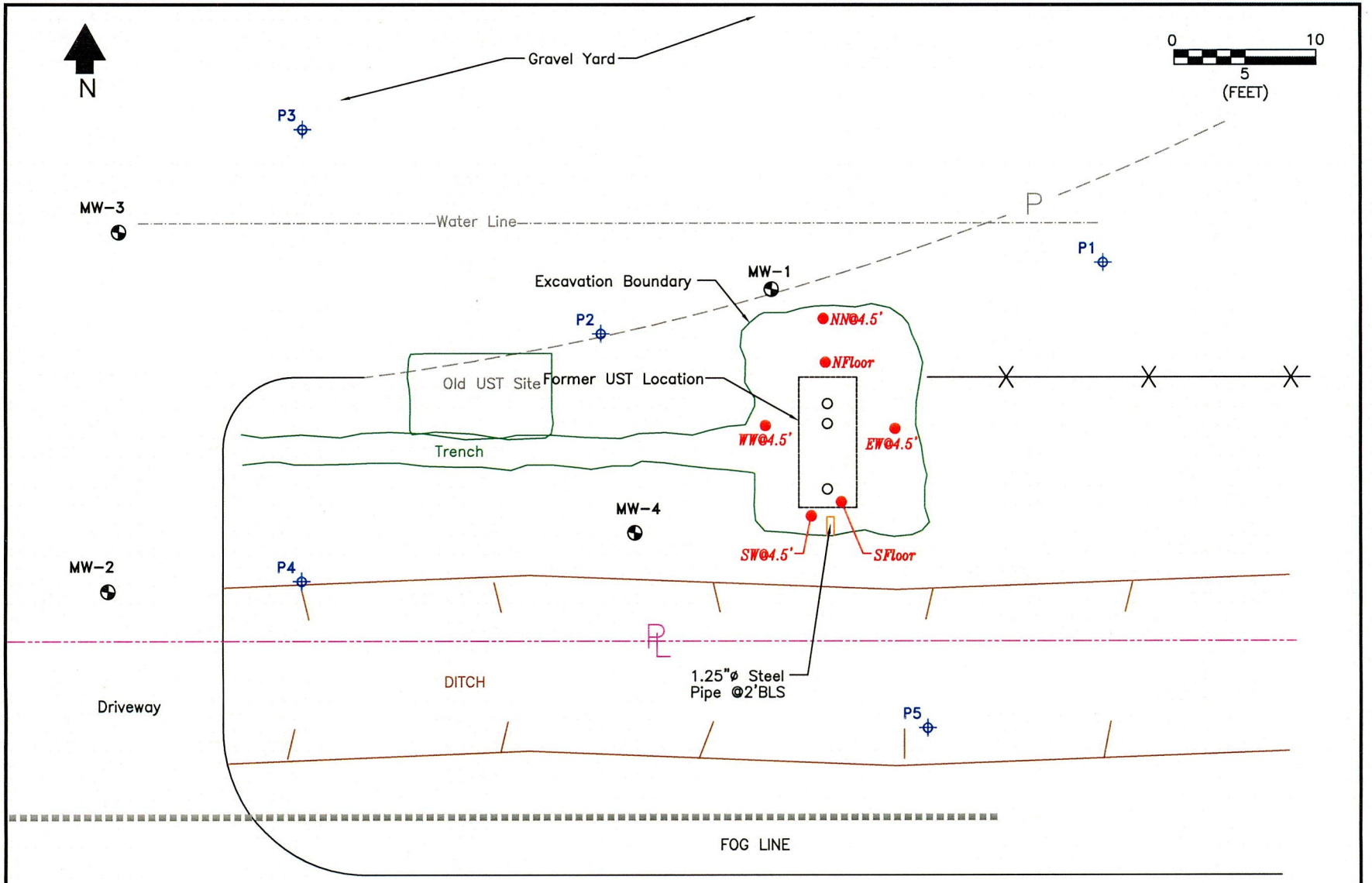

FIGURE 2

LEGEND

- P2 — Proposed Push Probe Location and Identification Number
- WW@4.5' — Confirmation Soil Sample Location and Identification Number
- MW-1 — Former Monitoring Well Location and Identification Number (LUST 29-00-0859)
- PL — Property Line
- Fence

TILLAMOOK CREAMERY, Old Latimer Road, Tillamook, OR

SITE PLAN SHOWING UST & CONFIRMATION SOIL SAMPLE LOCATIONS

Bergeson-Boese & Associates, Inc.
Comprehensive Environmental Services
32986 Roberts Court
Coburg, Oregon 97408
(541) 484-9484
25195 SW Parkway Ave., Suite207
Wilsonville, Oregon 97070
(503) 570-9484

Job Code:	TC02ISC.08UC
CADD File:	TC02ISC.08UC
Scale:	1"=10'
Drawn:	KATHRYN DAVIS DESIGNS
Checked:	ERIK CHAPMAN
Date:	06/20/08

ATTACHMENT 3

Laboratory Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND
9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

April 14, 2008

Erik Chapman
Bergeson, Boese and Associates-Wilsonville
25195 SW Parkway Ave Suite 207
Wilsonville, OR 97070

RE: Tillamook Creamery

Enclosed are the results of analyses for samples received by the laboratory on 04/01/08 15:02. The following list is a summary of the Work Orders contained in this report, generated on 04/14/08 17:16.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
PRD0028	Tillamook Creamery	TC021SC.080C

Callie Fahsholz For Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND
9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EW@4.6'	PRD0028-04	Soil	04/01/08 10:15	04/01/08 15:02
WW@4.6'	PRD0028-06	Soil	04/01/08 10:17	04/01/08 15:02
NFLOOR@7.5'	PRD0028-09	Soil	04/01/08 12:10	04/01/08 15:02
TC-WATER	PRD0028-10	Water	04/01/08 12:00	04/01/08 15:02

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Callie Fahsholz For Darrell Auvil, Project Manager

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Hydrocarbon Identification per NW-TPH Methodology

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PRD0028-04 (EW@4.6')		**Soil**				**Sampled: 04/01/08 10:15**				
Gasoline Range Hydrocarbons	NWTPH HCID	ND	-----	30.4	mg/kg dry	1x	8040083	04/02/08 16:25	04/02/08 21:32	
Diesel Range Hydrocarbons	"	ND	-----	75.9	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	"	ND	-----	152	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*91.2%*		*50 - 150 %*	"			"	
PRD0028-06 (WW@4.6')		**Soil**				**Sampled: 04/01/08 10:17**				
Gasoline Range Hydrocarbons	NWTPH HCID	ND	-----	31.1	mg/kg dry	1x	8040083	04/02/08 16:25	04/02/08 22:01	
Diesel Range Hydrocarbons	"	ND	-----	77.8	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	"	ND	-----	156	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*91.2%*		*50 - 150 %*	"			"	
PRD0028-09 (NFLOOR@7.5')		**Soil**				**Sampled: 04/01/08 12:10**				
Gasoline Range Hydrocarbons	NWTPH HCID	ND	-----	29.7	mg/kg dry	1x	8040083	04/02/08 16:25	04/02/08 22:30	
Diesel Range Hydrocarbons	"	ND	-----	74.2	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	"	ND	-----	148	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*94.9%*		*50 - 150 %*	"			"	
PRD0028-10 (TC-WATER)		**Water**				**Sampled: 04/01/08 12:00**				
Gasoline Range Hydrocarbons	NWTPH HCID	**DET**	-----	0.238	mg/l	1x	8040170	04/04/08 13:50	04/06/08 11:29	
Diesel Range Hydrocarbons	"	ND	-----	0.600	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	"	ND	-----	0.600	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*105%*		*50 - 150 %*	"			"	

TestAmerica Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

Callie Fahsholz For Darrell Auvil, Project Manager

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PORTLAND
9405 S.W. NIMBUS AVENUE
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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

BTEX per EPA Method 8021B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PRD0028-04 (EW@4.6')		**Soil**			**Sampled: 04/01/08 10:15**					
Benzene	EPA 8021B	ND	-----	0.0411	mg/kg dry	1x	8040217	04/07/08 14:30	04/08/08 11:03	
Toluene	"	ND	-----	0.0822	"	"	"	"	"	
Ethylbenzene	"	ND	-----	0.0822	"	"	"	"	"	
Xylenes (total)	"	ND	-----	0.164	"	"	"	"	"	
m,p-Xylene	"	**0.118**	-----	0.0822	"	"	"	"	"	
o-Xylene	"	ND	-----	0.0822	"	"	"	"	"	
Surrogate(s): a,a,a-TFT (PID)			*77.0%*		*60 - 130 %*	"			"	
PRD0028-06 (WW@4.6')		**Soil**			**Sampled: 04/01/08 10:17**					
Benzene	EPA 8021B	ND	-----	0.0395	mg/kg dry	1x	8040217	04/07/08 14:30	04/08/08 11:31	
Toluene	"	ND	-----	0.0790	"	"	"	"	"	
Ethylbenzene	"	ND	-----	0.0790	"	"	"	"	"	
Xylenes (total)	"	ND	-----	0.158	"	"	"	"	"	
m,p-Xylene	"	ND	-----	0.0790	"	"	"	"	"	
o-Xylene	"	ND	-----	0.0790	"	"	"	"	"	
Surrogate(s): a,a,a-TFT (PID)			*81.2%*		*60 - 130 %*	"			"	
PRD0028-09 (NFLOOR@7.5')		**Soil**			**Sampled: 04/01/08 12:10**					
Benzene	EPA 8021B	**0.110**	-----	0.0385	mg/kg dry	1x	8040217	04/07/08 14:30	04/08/08 11:58	
Toluene	"	**0.173**	-----	0.0769	"	"	"	"	"	
Ethylbenzene	"	ND	-----	0.0769	"	"	"	"	"	
Xylenes (total)	"	**0.296**	-----	0.154	"	"	"	"	"	
m,p-Xylene	"	**0.205**	-----	0.0769	"	"	"	"	"	
o-Xylene	"	**0.0912**	-----	0.0769	"	"	"	"	"	
Surrogate(s): a,a,a-TFT (PID)			*80.8%*		*60 - 130 %*	"			"	

TestAmerica Portland

Callie Fahsholz For Darrell Auvil, Project Manager

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Selected Volatile Organic Compounds (Including BTEX) per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PRD0028-10 (TC-WATER)		**Water**			**Sampled: 04/01/08 12:00**					**RL7**
1,2-Dibromoethane	EPA 8260B	ND	-----	50.0	ug/l	100x	8040320	04/09/08 08:00	04/09/08 16:07	
1,2-Dichloroethane	"	ND	-----	50.0	"	"	"	"	"	
Benzene	"	**2700**	-----	20.0	"	"	"	"	"	
Toluene	"	**5460**	-----	50.0	"	"	"	"	"	
Ethylbenzene	"	**736**	-----	50.0	"	"	"	"	"	
Xylenes (total)	"	**3520**	-----	100	"	"	"	"	"	
Methyl tert-butyl ether	"	ND	-----	200	"	"	"	"	"	
Naphthalene	"	ND	-----	200	"	"	"	"	"	
1,2,4-Trimethylbenzene	"	**538**	-----	100	"	"	"	"	"	
1,3,5-Trimethylbenzene	"	**135**	-----	50.0	"	"	"	"	"	
Isopropylbenzene	"	ND	-----	200	"	"	"	"	"	
n-Propylbenzene	"	**98.0**	-----	50.0	"	"	"	"	"	
Surrogate(s): *4-BFB*		*92.8%*			*80 - 120 %*	*1x*			"	
1,2-DCA-d4		*101%*			*80 - 120 %*	"			"	
Dibromofluoromethane		*95.8%*			*80 - 120 %*	"			"	
Toluene-d8		*97.6%*			*80 - 120 %*	"			"	

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Callie Fahsholz For Darrell Auvil, Project Manager

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PRD0028-10 (TC-WATER)		**Water**			**Sampled: 04/01/08 12:00**					
Acenaphthene	EPA 8270m	**0.535**	-----	0.0952	ug/l	1x	8040088	04/02/08 17:50	04/03/08 23:34	
Acenaphthylene	"	ND	-----	0.571	"	"	"	"	"	**RL1**
Anthracene	"	**0.299**	-----	0.0952	"	"	"	"	"	
Benzo (a) anthracene	"	**0.249**	-----	0.0952	"	"	"	"	"	
Benzo (a) pyrene	"	ND	-----	0.0952	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND	-----	0.0952	"	"	"	"	"	
Benzo (ghi) perylene	"	**0.101**	-----	0.0952	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	-----	0.0952	"	"	"	"	"	
Chrysene	"	**0.187**	-----	0.0952	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	-----	0.190	"	"	"	"	"	
Fluoranthene	"	**0.503**	-----	0.0952	"	"	"	"	"	
Fluorene	"	**0.886**	-----	0.0952	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	-----	0.0952	"	"	"	"	"	
Naphthalene	"	**249**	-----	4.76	"	50x	"	"	04/05/08 22:55	
Phenanthrene	"	**1.88**	-----	0.0952	"	1x	"	"	04/03/08 23:34	
Pyrene	"	**0.296**	-----	0.0952	"	"	"	"	"	
Surrogate(s): *Fluorene-d10*			*73.5%*		*25 - 125 %*	"			"	
Pyrene-d10			*55.4%*		*23 - 150 %*	"			"	
Benzo (a) pyrene-d12			*34.8%*		*10 - 125 %*	"			"	

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Callie Fahsholz For Darrell Auvil, Project Manager

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Percent Dry Weight (Solids) per Standard Methods

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PRD0028-04 (EW@4.6')		**Soil**			**Sampled: 04/01/08 10:15**					
% Solids	NCA SOP	**59.9**	-----	0.0100	% by Weight	1x	8040263	04/07/08 16:07	04/07/08 16:07	
PRD0028-06 (WW@4.6')		**Soil**			**Sampled: 04/01/08 10:17**					
% Solids	NCA SOP	**61.4**	-----	0.0100	% by Weight	1x	8040263	04/07/08 16:07	04/07/08 16:07	
PRD0028-09 (NFLOOR@7.5')		**Soil**			**Sampled: 04/01/08 12:10**					
% Solids	NCA SOP	**64.9**	-----	0.0100	% by Weight	1x	8040263	04/07/08 16:07	04/07/08 16:07	

TestAmerica Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

Callie Fahsholz For Darrell Auvil, Project Manager

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Gasoline Hydrocarbons by NWTPH-Gx and BTEX by EPA Method 8021B

TestAmerica Spokane

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PRD0028-10 (TC-WATER)		**Water**			**Sampled: 04/01/08 12:00**					
Gasoline Range Hydrocarbons	NWTPH-G/8021 B	**31300**	-----	1000	ug/l	10x	8040081	04/11/08 12:00	04/14/08 14:54	
Surrogate(s): 4-BFB (FID)			*138%*		*36 - 150 %*	*1x*			"	

Callie Fahsholz For Darrell Auvil, Project Manager

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Hydrocarbon Identification per NW-TPH Methodology - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8040083 **Soil Preparation Method: EPA 3550 Fuels**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8040083-BLK1)								Extracted: 04/02/08 16:25						
Gasoline Range Hydrocarbons	NWTPH HCID	ND	---	20.0	mg/kg wet	1x	--	--	--	--	--	--	04/02/08 18:39	
Diesel Range Hydrocarbons	"	ND	---	50.0	"	"	--	--	--	--	--	--	"	
Heavy Oil Range Hydrocarbons	"	ND	---	100	"	"	--	--	--	--	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 104%*			*Limits: 50-150%*	"							*04/02/08 18:39*	
Duplicate (8040083-DUP1)					QC Source: PRC0900-01			Extracted: 04/02/08 16:25						
Gasoline Range Hydrocarbons	NWTPH HCID	ND	---	23.7	mg/kg dry	1x	ND	--	--	--	NR	(50)	04/02/08 19:08	
Diesel Range Hydrocarbons	"	ND	---	59.2	"	"	ND	--	--	--	NR	"	"	
Heavy Oil Range Hydrocarbons	"	ND	---	118	"	"	ND	--	--	--	NR	"	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 96.3%*			*Limits: 50-150%*	"							*04/02/08 19:08*	

QC Batch: 8040170 **Water Preparation Method: EPA 3510 Fuels**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8040170-BLK1)								Extracted: 04/04/08 13:50						
Gasoline Range Hydrocarbons	NWTPH HCID	ND	---	0.125	mg/l	1x	--	--	--	--	--	--	04/06/08 11:01	
Diesel Range Hydrocarbons	"	ND	---	0.315	"	"	--	--	--	--	--	--	"	
Heavy Oil Range Hydrocarbons	"	ND	---	0.315	"	"	--	--	--	--	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 82.5%*			*Limits: 50-150%*	"							*04/06/08 11:01*	

TestAmerica Portland

Callie Fahsholz For Darrell Auvil, Project Manager

TestAmerica
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ph: (503) 906.9200 fax: (503) 906.9210

Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

BTEX per EPA Method 8021B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8040217 **Soil Preparation Method: AK101 Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8040217-BLK1)								Extracted: 04/07/08 14:30						
Benzene	EPA 8021B	ND	---	0.0243	mg/kg wet	1x	--	--	--	--	--	--	04/07/08 22:57	
Toluene	"	ND	---	0.0485	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.0485	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	0.0971	"	"	--	--	--	--	--	--	"	
m,p-Xylene	"	ND	---	0.0485	"	"	--	--	--	--	--	--	"	
o-Xylene	"	ND	---	0.0485	"	"	--	--	--	--	--	--	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 107%*			*Limits: 60-130%*	"							*04/07/08 22:57*	
LCS (8040217-BS1)								Extracted: 04/07/08 14:30						
Benzene	EPA 8021B	0.502	---	0.0250	mg/kg wet	1x	--	0.500	100%	(75-135)	--	--	04/07/08 22:02	
Toluene	"	0.502	---	0.0500	"	"	--	"	100%	(80-130)	--	--	"	
Ethylbenzene	"	0.512	---	0.0500	"	"	--	"	103%	"	--	--	"	
Xylenes (total)	"	1.56	---	0.100	"	"	--	1.50	104%	"	--	--	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 107%*			*Limits: 60-130%*	"							*04/07/08 22:02*	
Matrix Spike (8040217-MS1)							QC Source: PRC0900-02	Extracted: 04/07/08 14:30						
Benzene	EPA 8021B	0.584	---	0.0297	mg/kg dry	1x	ND	0.593	98.4%	(65-135)	--	--	04/08/08 01:40	
Toluene	"	0.582	---	0.0593	"	"	ND	"	98.2%	(70-130)	--	--	"	
Ethylbenzene	"	0.592	---	0.0593	"	"	ND	"	99.9%	(70-140)	--	--	"	
Xylenes (total)	"	1.79	---	0.119	"	"	ND	1.78	101%	(65-140)	--	--	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 86.2%*			*Limits: 60-130%*	"							*04/08/08 01:40*	
Matrix Spike Dup (8040217-MSD1)							QC Source: PRC0900-02	Extracted: 04/07/08 14:30						
Benzene	EPA 8021B	0.649	---	0.0297	mg/kg dry	1x	ND	0.593	109%	(65-135)	10.6%	(20)	04/08/08 02:07	
Toluene	"	0.645	---	0.0593	"	"	ND	"	109%	(70-130)	10.2%	"	"	
Ethylbenzene	"	0.657	---	0.0593	"	"	ND	"	111%	(70-140)	10.4%	"	"	
Xylenes (total)	"	2.00	---	0.119	"	"	ND	1.78	112%	(65-140)	10.7%	"	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 90.4%*			*Limits: 60-130%*	"							*04/08/08 02:07*	

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Callie Fahsholz For Darrell Auvil, Project Manager

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Selected Volatile Organic Compounds (Including BTEX) per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8040320 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8040320-BLK1)								**Extracted: 04/09/08 08:00**						
1,2-Dibromoethane	EPA 8260B	ND	---	0.500	ug/l	1x	--	--	--	--	--	--	04/09/08 10:20	
1,2-Dichloroethane	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Benzene	"	ND	---	0.200	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Methyl tert-butyl ether	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
1,2,4-Trimethylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
1,3,5-Trimethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Isopropylbenzene	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
n-Propylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 92.4%*			*Limits: 80-120%*	"							*04/09/08 10:20*	
1,2-DCA-d4		*102%*			*80-120%*	"							"	
Dibromofluoromethane		*96.0%*			*80-120%*	"							"	
Toluene-d8		*98.4%*			*80-120%*	"							"	
LCS (8040320-BS1)								**Extracted: 04/09/08 08:00**						
1,2-Dibromoethane	EPA 8260B	20.5	---	0.500	ug/l	1x	--	20.0	103%	(80-140)	--	--	04/09/08 08:53	
1,2-Dichloroethane	"	19.7	---	0.500	"	"	--	"	98.4%	(75-135)	--	--	"	
Benzene	"	19.1	---	0.200	"	"	--	"	95.4%	(80-120)	--	--	"	
Toluene	"	19.6	---	0.500	"	"	--	"	97.8%	(80-125)	--	--	"	
Ethylbenzene	"	20.2	---	0.500	"	"	--	"	101%	(80-130)	--	--	"	
Xylenes (total)	"	60.2	---	1.00	"	"	--	60.0	100%	"	--	--	"	
Methyl tert-butyl ether	"	18.6	---	2.00	"	"	--	20.0	93.1%	(80-135)	--	--	"	
Naphthalene	"	21.7	---	2.00	"	"	--	"	108%	(60-150)	--	--	"	
1,2,4-Trimethylbenzene	"	21.4	---	1.00	"	"	--	"	107%	(75-125)	--	--	"	
1,3,5-Trimethylbenzene	"	20.4	---	0.500	"	"	--	"	102%	(75-135)	--	--	"	
Isopropylbenzene	"	20.4	---	2.00	"	"	--	"	102%	(80-140)	--	--	"	
n-Propylbenzene	"	21.0	---	0.500	"	"	--	"	105%	(80-130)	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 97.5%*			*Limits: 80-120%*	"							*04/09/08 08:53*	
1,2-DCA-d4		*101%*			*80-120%*	"							"	
Dibromofluoromethane		*100%*			*80-120%*	"							"	
Toluene-d8		*99.6%*			*80-120%*	"							"	

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Selected Volatile Organic Compounds (Including BTEX) per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8040320 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS Dup (8040320-BSD1)								**Extracted: 04/09/08 08:00**						
1,2-Dibromoethane	EPA 8260B	19.9	---	0.500	ug/l	1x	--	20.0	99.6%	(80-140)	2.87%	(25)	04/09/08 09:22	
1,2-Dichloroethane	"	18.6	---	0.500	"	"	--	"	93.1%	(75-135)	5.48%	"	"	
Benzene	"	18.0	---	0.200	"	"	--	"	90.2%	(80-120)	5.66%	"	"	
Toluene	"	18.5	---	0.500	"	"	--	"	92.4%	(80-125)	5.73%	"	"	
Ethylbenzene	"	19.1	---	0.500	"	"	--	"	95.6%	(80-130)	5.40%	"	"	
Xylenes (total)	"	56.9	---	1.00	"	"	--	60.0	94.9%	"	5.65%	"	"	
Methyl tert-butyl ether	"	18.0	---	2.00	"	"	--	20.0	90.0%	(80-135)	3.39%	"	"	
Naphthalene	"	21.9	---	2.00	"	"	--	"	110%	(60-150)	1.15%	"	"	
1,2,4-Trimethylbenzene	"	20.4	---	1.00	"	"	--	"	102%	(75-125)	4.54%	"	"	
1,3,5-Trimethylbenzene	"	19.4	---	0.500	"	"	--	"	97.0%	(75-135)	4.98%	"	"	
Isopropylbenzene	"	19.4	---	2.00	"	"	--	"	96.8%	(80-140)	5.43%	"	"	
n-Propylbenzene	"	19.8	---	0.500	"	"	--	"	98.9%	(80-130)	5.94%	"	"	
Surrogate(s): 4-BFB		*Recovery: 97.2%*			*Limits: 80-120%*	"							*04/09/08 09:22*	
1,2-DCA-d4		*102%*			*80-120%*	"							"	
Dibromofluoromethane		*99.6%*			*80-120%*	"							"	
Toluene-d8		*100%*			*80-120%*	"							"	

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8040088 **Water Preparation Method: 3520B Liq-Liq**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8040088-BLK1)									Extracted: 04/02/08 17:50					
Acenaphthene	EPA 8270m	ND	---	0.100	ug/l	1x	--	--	--	--	--	--	04/03/08 21:23	
Acenaphthylene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Benzo (a) anthracene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Benzo (a) pyrene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Benzo (b) fluoranthene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Benzo (ghi) perylene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Benzo (k) fluoranthene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Chrysene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Dibenzo (a,h) anthracene	"	ND	---	0.200	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Indeno (1,2,3-cd) pyrene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Phenanthrene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	---	0.100	"	"	--	--	--	--	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 69.8%*			*Limits: 25-125%*	"							*04/03/08 21:23*	
Pyrene-d10		*63.3%*			*23-150%*	"							"	
Benzo (a) pyrene-d12		*74.8%*			*10-125%*	"							"	
LCS (8040088-BS1)									Extracted: 04/02/08 17:50					
Acenaphthene	EPA 8270m	2.15	---	0.100	ug/l	1x	--	2.50	85.9%	(26-135)	--	--	04/03/08 21:51	
Benzo (a) pyrene	"	2.25	---	0.100	"	"	--	"	89.9%	(38-137)	--	--	"	
Pyrene	"	1.82	---	0.100	"	"	--	"	72.7%	(33-133)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 88.5%*			*Limits: 25-125%*	"							*04/03/08 21:51*	
Pyrene-d10		*70.8%*			*23-150%*	"							"	
Benzo (a) pyrene-d12		*80.3%*			*10-125%*	"							"	
LCS Dup (8040088-BSD1)									Extracted: 04/02/08 17:50					
Acenaphthene	EPA 8270m	2.07	---	0.100	ug/l	1x	--	2.50	82.9%	(26-135)	3.60%	(60)	04/03/08 22:38	
Benzo (a) pyrene	"	2.26	---	0.100	"	"	--	"	90.4%	(38-137)	0.560%	"	"	
Pyrene	"	1.85	---	0.100	"	"	--	"	74.2%	(33-133)	1.94%	"	"	
Surrogate(s): Fluorene-d10		*Recovery: 84.6%*			*Limits: 25-125%*	"							*04/03/08 22:38*	
Pyrene-d10		*71.8%*			*23-150%*	"							"	
Benzo (a) pyrene-d12		*85.1%*			*10-125%*	"							"	

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Percent Dry Weight (Solids) per Standard Methods - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8040263 **Other dry Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (8040263-DUP1)					**QC Source: PRD0028-04**			**Extracted: 04/07/08 16:07**						
% Solids	NCA SOP	59.9	---	0.0100	% by Weight	1x	59.9	--	--	--	0.00%	(20)	04/07/08 16:07	

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Gasoline Hydrocarbons by NWTPH-Gx and BTEX by EPA Method 8021B - Laboratory Quality Control Results

TestAmerica Spokane

QC Batch: 8040081 **Water Preparation Method: GC Volatiles**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8040081-BLK1)								Extracted: 04/11/08 12:00						
Gasoline Range Hydrocarbons	NWTPH-G/8021B	ND	---	100	ug/l	1x	--	--	--	--	--	--	04/11/08 14:01	
Surrogate(s): 4-BFB (FID)		*Recovery: 105%*			*Limits: 36-150%*	"							*04/11/08 14:01*	
LCS (8040081-BS1)								Extracted: 04/11/08 12:00						
Gasoline Range Hydrocarbons	NWTPH-G/8021B	868	---	100	ug/l	1x	--	1000	86.8%	(80-120)	--	--	04/11/08 17:31	
Surrogate(s): 4-BFB (FID)		*Recovery: 125%*			*Limits: 36-150%*	"							*04/11/08 17:31*	
Duplicate (8040081-DUP1)							QC Source: SRD0066-04	Extracted: 04/11/08 12:00						
Gasoline Range Hydrocarbons	NWTPH-G/8021B	ND	---	100	ug/l	1x	ND	--	--	--	10.9%	(35)	04/11/08 16:37	
Surrogate(s): 4-BFB (FID)		*Recovery: 101%*			*Limits: 36-150%*	"							*04/11/08 16:37*	
Matrix Spike (8040081-MS1)							QC Source: SRD0066-04	Extracted: 04/11/08 12:00						
Gasoline Range Hydrocarbons	NWTPH-G/8021B	906	---	100	ug/l	1x	32.1	1000	87.4%	(55.6-126)	--	--	04/11/08 17:04	
Surrogate(s): 4-BFB (FID)		*Recovery: 123%*			*Limits: 36-150%*	"							*04/11/08 17:04*	

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Bergeson, Boese and Associates-Wilsonville	Project Name:	**Tillamook Creamery**	
25195 SW Parkway Ave Suite 207	Project Number:	TC021SC.080C	Report Created:
Wilsonville, OR 97070	Project Manager:	Erik Chapman	04/14/08 17:16

Notes and Definitions

Report Specific Notes:

RL1 - Reporting limit raised due to sample matrix effects.

RL7 - Sample required dilution due to high concentrations of target analyte.

Laboratory Reporting Conventions:

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR/NA - Not Reported / Not Available

dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.

wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.

RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.

Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Callie Fahsholz For Darrell Auvil, Project Manager

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2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PRD0028

CLIENT: Bergerson Boese & Assoc

REPORT TO: Erik Chapman

ADDRESS: 25195 SW Parkway Ave 207 Wilsonville OR 97070

PHONE: 503 570-9489 FAX: 503 570-0584

INVOICE TO: Ron Bergerson Colbourg

P.O. NUMBER:

PROJECT NAME: Tillamook Creamery

PROJECT NUMBER: TCC2 15C.080C

SAMPLED BY: Eric

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [X] STD 7 5 4 3 2 1 <1

Petroleum Hydrocarbon Analyses: [X] STD 4 3 2 1 <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME		TPH * HCID	BTEX 8021B											MATRIX (W, S, O)	# OF CONT.	LOCATION COMMENTS	TA WO ID
1	NW@4.6'	4/1/08	1010													S	1		
2	N FLOOR@7'	↓	1020													↓	↓		
3	SW@4.6'	↓	1012													↓	↓		
4	EW@4.6'	↓	1015	X	X											↓	↓		
5	SFLOOR@7'	↓	1022													↓	↓		
6	WW@4.6'	↓	1017	X	X											↓	↓		
7	STOCKPILE1	↓	1040													↓	↓		
8	STOCKPILE2	↓	1045													↓	↓		
9	NFLOOR@7.5'	↓	1210	X	X											↓	↓		
10																			

RELEASED BY: [signature]	DATE: 4/1/08	RECEIVED BY: Jamie Freeland	DATE: 4/1/08
PRINT NAME: ERIK CHAPMAN FIRM: BBA	TIME: 1502	PRINT NAME: J. Freeland FIRM: TAP	TIME: 15:02
RELEASED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS: * Quantify if detect by NWTPH methods as appropriate

TEMP: 10.7 3.8

PAGE 1 OF 2

COC REV 09/2004

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2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PRD0028

CLIENT: Bergeson Boese & Assoc

REPORT TO: Eric Chapman
ADDRESS: 25195 SW Parkway Ave 207 Wilsonville, OR 97070

PHONE: 503-570-9787 FAX: 503 570 0554

INVOICE TO: Ron Bergeson - Corvallis

P.O. NUMBER:

PROJECT NAME: Tillamook Creamery

PROJECT NUMBER: TC0215c.08vC

SAMPLED BY: Eric

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: [X] 10 STD, 7, 5, 4, 3, 2, 1, <1
Petroleum Hydrocarbon Analyses: [X] 5 STD, 4, 3, 2, 1, <1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	TPH * HCID	VOCs 8260	PAH 8270 SIM	MATRIX (W, S, O)	# OF CONT.	LOCATION COMMENTS	TA WO ID
1 TC-WATER	4/1/08 1200	X	X	X	W	12	not field filtered	
2								
3								
4								
5								
6								
7								
8								
9								
10								

PRESERVATIVE: (blank)

RELEASED BY: [signature]		DATE: 4/1/08	RECEIVED BY: Jamie Ireland		DATE: 4/1/08
PRINT NAME: Eric Chapman	FIRM: BBA	TIME: 1503	PRINT NAME: J. Ireland	FIRM: TAP	TIME: 15:03
RELEASED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS: * Quantify if detect using NWTPH methods

JI TEMP: 4.7 3.8 PAGE 2 OF 2

COC REV 09/2004

TestAmerica Sample Receipt Checklist

Received by: (Section A)
Date: 4/1/08
Time: 15:02
Initials: JL

Unpacked by: (Section B)
Date: 4/1/08
Initials: JL

Logged-in by:
Date: 4/1/08
Initials: JL

Work Order No. PRD0028
Client: BBA
Project: Tillamook Creamery

Temperature out of range
___Not enough Ice
___No Ice
___Ice Melted
___Win 4 Hours
___Other

***ESI Clients (see Section C)

Cooler Temperature (IR): 2.8 C plastic glass NA (oil/air samples, ESI client) Temperature Blank: _____ C

A

Custody Seals: (#____)
Signature: Y N Dated:_____
X None

Container Type:
1 #Cooler(s)
____#Box(s)
____None (___#Other:_____)

Coolant Type:
X Gel Ice
____Loose Ice
____None

Packing Material:
X Bubble Bags
____Styrofoam Cubbies
____None (____Other _____)

Received from:
____TA Courier
____Senvoy
____UPS
____Fed Ex
X Client
____TDP
____DHL
____SDS
____Mid-Valley
____GS/TA
____GS/Senvoy
____Other
_____

B

Sample Status:
(If N circled, see NOD)

General:			
Intact?	Y	N	
# Containers Match COC?	Y	N	none given
IDs Match COC?	Y	N	
For Analyses Requested:			
Correct Type & Preservation?	Y	N	
Adequate Volume?	Y	N	
Within Hold Time?	Y	N	
Volatiles/ Oil Quality:			
VOAs/ Syringes free of Headspace?	Y	N	NA
TB on COC? (not provided)	Y	N	NA
Metals			
HNO3 Preserved?	Y	N	NA
Dissolved Metals Filtered?	Y	N	NA

C

***ESI Clients Only:

Temperature Blank: ____ C not provided

All preserved bottles checked Y N NA (voas/soils/all unp.)
All preserved accordingly? Y N (see NOD) NA (voas/soils/all unp.)

FED EX/ UPS Was the tracking paper keepable? YES NO

If circled NO, what is the Tracking number? _____

FED EX Goldstreak UPS DHL Other: _____

Project Managers:

Comments:_____

PM Reviewed:_____ (Initial/Date)

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
Fax: (503) 229-6945
TTY: (503) 229-5471

June 11, 2008

SHAWN REIERSGAARD
TILLAMOOK CREAMERY
PO BOX 313
TILLAMOOK OR 97141

RE: Tillamook Creamery
File No.: 29-08-0695

On June 11, 2008, a release was reported from an underground storage tank (UST) system at your facility located at 4185 Highway 101 North in Tillamook, Oregon. As the responsible party for the facility, you are required to clean up the release according to OAR 340-122-0201 through 340-122-0360. These rules require cleaning up the soil, groundwater, surface water and any other media contaminated by petroleum to the appropriate standards or demonstrating that the contamination does not pose a risk to human health or the environment. We are looking forward to working with you to bring this site to closure.

An Initial Report Form for UST Cleanup Projects is enclosed. This form needs to be completed and returned to this office within twenty (20) days from the date the release was reported. An outline of additional reporting requirements that includes due dates for submittals is also enclosed. A copy of the UST Cleanup regulations or an application for a letter of authorization for soil treatment will be provided upon request. As the responsible party, you should be aware of the requirements for cleanup, even if you have hired a qualified contractor or consultant to assist you.

Please reference the DEQ File Number listed above in all future correspondence and reports.

By law, DEQ is required to recover project oversight costs. DEQ oversight begins with the initial site characterization and continues through site closure. Oversight includes activities such as reviewing reports, preparing correspondence, answering technical questions, site inspections, and enforcement actions. **You will be receiving an invoice each month for all oversight activities performed to date.**

DEQ's highest priority for oversight are those sites that pose the greatest hazard to human health, safety and the environment. As a result, many lower environmental priority sites will not be reviewed in detail or receive a final "No Further Action" or "closure" letter from DEQ until the higher priority sites are addressed. However, all projects, simple or complex, require at least some oversight. At a minimum, review is conducted to determine the environmental priority of the cleanup project.

For those responsible parties who desire DEQ oversight regardless of environmental priority, we have developed a Responsible Party Priority Site Program. To receive oversight and more effectively schedule your project, you will be asked to sign an agreement requesting priority review and confirming your agreement to pay DEQ oversight costs in a timely manner.

Not entering into the Agreement does not release you from responsibility for investigation and/or cleanup of the contamination, nor does it mean that you are exempt from paying for DEQ oversight costs. Please be aware that there may be a waiting list for assignment to the next available project manager, and that these projects are assigned on a first come, first served basis.

Please read the attached information on the cost recovery and invoice process. We have also included information about the Responsible Party Priority Site Program and an agreement, if you are interested in expediting review of your project. You may contact the Land Quality Division at (503) 229-6635 if you have questions about cost recovery.

Thank you for your cooperation and continued efforts to comply with the regulations. **If you have any questions about the regulations and/or your cleanup project, please call (503) 229-5263 and ask to speak to the Underground Storage Tank Duty Officer.**

Sincerely,

Michael H. Kortenhof, Manager
UST Cleanup and Compliance Section

Enclosures

DANA Kevin

To: RJBOESE@INTEGRITY.COM
Subject: OLPRR Incident Report in Accepted Status. Log Number: 29-08-0695

Your on-line tank data submittal has been reviewed and accepted by the State of Oregon DEQ. New LUST Incident Log Number: 29-08-0695

Reported by: ERIK RD CHAPMAN RG
Company Name: BERGESON-BOESE & ASSOCIATES INC
Phone Number: 503-570-9484 X 14

Site Name: TILLAMOOK CREAMERY
Site Address: 4185 Highway 101 N
Site County: TILLAMOOK
Site City: TILLAMOOK
Site Zip Code: 97141
Comments: THE TANK WHERE THE RELEASE OCCURRED IS ADJACENT TO LUST FACILITY 29-00-0859, WHICH HAS BEEN GRANTED NFA STATUS. BB&A REQUESTS THAT A DEQ PROJECT MANAGER CONTACT US TO DISCUSS THE USE OF PREVIOUS GROUNDWATER DATA FROM MONITORING WELLS AT LUST SITE 29-00-0859 FOR USE TO SUPPORT THE CLOSURE OF THE RECENT RELEASE.

Date Received: 6/11/2008
Release Type: UnRegulated
Facility ID: 3696

RESPONSIBLE PARTY INFORMATION
First Name:
Shawn
Last Name:
Reiersgaard
Organization:
Tillamook Creamery
City:
Tillamook
Phone:
503-815-1338
Address:
PO Box 313
State:
OR
Zip:
97141
Email:
sreiersgaard@tillamookcheese.com

INVOICE CONTACT INFORMATION
First Name:
Shawn
Last Name:
Reiersgaard
Organization:
Tillamook Creamery
City:
Tillamook
Phone:
503-815-1338
Address:
PO Box 313
State:
OR
Zip:
97141
Email:
sreiersgaard@tillamookcheese.com

Confirmation: Contractor
Discovery: Decommissioning
Cause: Physical/Mechanical Damage

MEDIA TYPE
Ground Water

CONTAMINANT TYPE
Misc. Gasoline

DANA Kevin

From: Oregon DEQ - Do not reply [OregonDEQ@deq.state.or.us]
Sent: Wednesday, June 11, 2008 8:16 AM
To: DEQTanksReviewNWR
Subject: OLPRR LUST Tank Start Notification for DEQ Staff

New LUST Incident information submitted to State of Oregon DEQ for review.

Contractor : BERGESON-BOESE & ASSOCIATES INC
Reported by: ERIK RD CHAPMAN RG
Phone Number: 503-570-9484 X 14

Site Name: tillamook creamery
Site Address: 4185 N 101 Highway
Site City: tillamook
Site Zip Code: 97141

Site County: Tillamook
Received by State of Oregon DEQ : 6/11/2008 8:15:42 AM.

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471

August 20, 2002

SHAWN REIERSGAARD
TILLAMOOK COUNTY CREAMERY ASSOCIATION
PO BOX 313
TILLAMOOK OREGON 97141

Re: Tillamook Co. Creamery
File No. 29-00-0859

Dear Mr. Reiersgaard:

The Department of Environmental Quality has completed our review of information submitted to-date regarding the underground storage tank (UST) decommissioning project completed at your facility located at 4185 Highway 101 North in Tillamook, Oregon. The Department has determined that the cleanups appear to have met the requirements of Oregon Administrative Rules (OAR) 340-122-205 through 340-122-360 and that no further action is required at this time.

This determination is a result of our evaluation and judgement based on the regulations and facts as we now understand them:

1. One abandoned 675-gallon gasoline UST was discovered at this location and decommissioned in-place.

2. Two (2) push-probe borings were placed near the UST for the purpose of assessing soil and groundwater impacts. Soil and groundwater samples were collected and tested for the presence of gasoline by method Total Petroleum Hydrocarbons (TPH-Gx), Polynuclear Aromatic Hydrocarbons (PAHs), and benzene, toluene, ethylbenzene, toluene and naphthalene (BTEX + N). Laboratory analytical results detected TPH-Gx at 720 parts per million (ppm), that exceeds the Soil Matrix Level II cleanup level of 80 ppm that was established for the site. Benzene was detected in the groundwater sample at a concentration of 110 parts per billion (ppb), which exceeds the Department's screening level for "Risk-Based Decision-Making (RBDM)", September 1999.

3. Four (4) groundwater monitoring wells were installed near the decommissioned UST for the purpose of defining the full magnitude and extent of impacts. Based on the groundwater monitoring well results, impacts are limited to within vicinity of the UST and are not migrating off-site.

4. A Conceptual Site Model (CSM) was completed to assess routes of exposures. Based on the CSM, direct contact with groundwater by excavation workers was determined to be exposure pathway applicable to the site for the contaminants of concern (benzene at 5.7 ppb and 1,2-dichloroethane at 2.0 ppb).

5. A Beneficial Water Use Survey determined that ingestion by groundwater was determined to be incomplete and the pathway eliminated. The trench workers exposure pathway was eliminated because utilities (power, telephone, water) are located less than 3' below ground surface, preventing trench utility workers from encountering the deeper contaminants of concern.

The Department's determination will not be applicable if new or undisclosed facts show that the cleanup does not comply with the referenced rules. The Department's determination also does not apply to any conditions at the site other than the release of the petroleum product specifically addressed in your report. We recommend that a copy of all information be maintained with the permanent facility records.

Please note that pursuant to OAR 340-122-360(2), a copy of your report must be retained until ten (10) years after the first transfer of the property.

Your efforts to comply with the regulations to ensure that your facility has been adequately cleaned up are appreciated. Should you have any questions, please feel free to contact me at 503-229-6242.

Sincerely,

Herrington Rose
UST Cleanup Specialist
Northwest Region

Cc: Bergeson-Boese & Associates, Inc.
29791 SW Kinsman Rd.
Wilsonville, OR 97070

TillamookCremery::rhr

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

NORTHWEST REGION

June 22, 1994

MR SHAWN REIERSGAARD
TILLAMOOK COUNTY CREAMERY
PO BOX 313
TILLAMOOK OREGON 97141

Re: Tillamook Creamery
File No. 29-91-128

Dear Mr. Reiersgaard:

The Department of Environmental Quality has completed its review of the information submitted to date concerning the underground storage tank (UST) decommissionings and cleanups conducted at 4175 Highway 101 N. in Tillamook, Oregon. The Department has determined that the cleanup appears to have met the requirements of the Oregon Administrative Rules (OAR) 340-122-205 through 340-122-360 and that no further action is required at this time.

This determination is a result of our evaluation and judgement based on the regulations and facts as we now understand them, including:

1. A 1000 and a 600 gallon gasoline UST, a 4000 gallon diesel UST, and a 1000 and a 8000 gallon heating oil UST were decommissioned at this location. The tanks were recycled at Schnitzer Steel Products and Mt. Hood Metals.

2. Contamination was discovered around each of the tanks during the decommissioning. Approximately 1000 cubic yards of contaminated soil was removed from the excavations and treated onsite. During January, 1994, approximately 245 tons of soil that resisted treatment were taken to Hillsboro Landfill for Disposal.

   The remaining soil was treated until no contamination was detected in confirmatory soil samples. The soil was used as fill material onsite. The soil was not be placed in contact with waters of the state or sensitive environments and will be managed in a way to prevent human contact.

3. The contamination in the 1000 gallon gasoline and 4000 gallon diesel tank excavation was excavated until no contamination was detected in confirmatory samples.

   After excavation of contaminated soil around the 600 gallon gasoline tank, a maximum of 65 ppm gasoline and 150 ppm diesel remained. These

2020 SW Fourth Avenu
Suite 400
Portland, OR 97201-498
(503) 229-5263 Voice/TD
DEQ-1

concentrations are below the 80 ppm gasoline and 500 ppm diesel cleanup levels established by Dan Obrist.

The contamination in the heating oil tank excavation was removed until a maximum of 92 parts per million diesel remained.

4. Groundwater was encountered in the heating oil tank excavation. After soil removal was complete, the groundwater was sampled. No benzene, ethylbenzene, toluene, xylenes, or polynuclear aromatic hydrocarbons were detected in the water sample.

The Department's determination will not be applicable if new or undisclosed facts show that the cleanup does not comply with the referenced rules. The Department's determination also does not apply to any conditions at the site other than the release of the petroleum product specifically addressed in the reports. We recommend that a copy of this information be kept with the permanent facility records.

Please note that pursuant to OAR 340-122-360(2), a copy of your report must be retained until ten (10) years after the first transfer of the property.

Your efforts to comply with the regulations to ensure that your facility has been adequately cleaned up has been appreciated. If you have any questions, please feel free to contact me at (503) 229-5474.

Sincerely,

Andree Pollock

Andree Pollock
UST Cleanup Specialist

29-88-0037

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

NEIL GOLDSCHMIDT
GOVERNOR

August 1, 1989

Mr. Jim Spindler
Plant Engineer
Tillamook County Creamery Association
P.O. Box 313
Tillamook, Oregon 97141

Re: UST-Tillamook County
Tillamook County Creamery

Dear Mr. Spindler:

Thank you for your quick response to our request for a report on the cleanup of Bunker "C" contaminated soil conducted at your site located on Highway 101 in Tillamook, Oregon. We have completed our review of your letter, dated July 26, 1989. Since this information indicates that the decommissioning and cleanup met our criteria, no further action is required at this time.

This decision is a result of our evaluation and judgement based on the regulations and facts as we now understand them, including:

1. The bunker "C" fuel oil tank was removed from the site by Petroleum Equipment Maintenance Company and properly disposed of.

2. Approximately 800 cubic yards of contaminated fill material was removed from the site and disposed of at the Tillamook County Landfill. All visibly contaminated soil was removed from the site. The contaminated soil consisted of the porous back fill material that had surrounded the tank. The native soils were clays that did not facilitate Bunker "C" migration into them.

3. Although no confirmation analyses were taken, the viscous nature of Bunker"C" fuel oil, its lack of volatile constituents, and the fine nature of the native soils indicate that any remaining, unobserved contamination has little potential for migration and further environmental impacts.

Information concerning the tank and contaminated soil removal should be maintained with the permanent facility records. We remind you that the current investigation applies only to the leaking underground storage tank system and in no way transfers any liability to the State of Oregon. Although we agree that the current conditions at the site do not appear to pose an environmental threat, the responsibility for environmental evaluation, reporting, and cleanup rests with the landowners.

If you have any question regarding this matter, please contact me at 229-6923.

Sincerely,

Andree Pollock

Andree Pollock
Leaking UST Specialist
Northwest Region

cc: Environmental Cleanup Division, LUST Section