

Terrestrial Ecological Evaluation for Coleman Oil Company Wenatchee, Washington

Prepared for:
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Project # 112.01

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SIGNATURE PAGE

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned:



Timothy J. Haderly, Principal Scientist/Owner
Loowit Consulting Group, LLC

LIST OF ACRONYMS

BAF	Bioaccumulation Factor
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
CAP	Cleanup Action Plan
DRPH	Diesel Range Petroleum Hydrocarbons
GRPH	Gasoline Range Petroleum Hydrocarbons
MDL	Method Detection Limit
MTCA	Model Toxics Control Act
NFA	No Further Action
ORPH	Oil Range Petroleum Hydrocarbons
RCW	Revised Code of Washington
TEE	Terrestrial Ecological Evaluation
TPH	Total Petroleum Hydrocarbons
VCP	Voluntary Cleanup Program
WAC	Washington Administrative Code

INTRODUCTION

Purpose and Need

Loowit Consulting Group, LLC (LCG) was retained by HydroCon, LLC to conduct a Terrestrial Ecological Evaluation (TEE) at the Coleman Oil Company site located at 600 S Worthen St. in Wenatchee, Washington (Figure 1). On March 17, 2017, the Wenatchee Fire Department reported the presence of a sheen and petroleum odor on the Columbia River between Thurston and Chehalis Streets in Wenatchee, Washington. A subcontractor hired by Coleman Oil Company conducted a line tightness test on March 24, 2017 on underground pipe lines used to transfer fuel from ASTs at Tank Farm A to the truck loading rack on the property. Two of the fuel lines would not hold pressure: the R99 renewable diesel fuel line and the B75 biodiesel fuel line. A review of Coleman Oil inventory records indicated that the release was most likely from the R99 renewable diesel fuel line.

As part of an Agreed Order under the Washington State Model Toxics Control ACT (MTCA) WAC 173-340, Coleman Oil has conducted additional subsurface investigations to further define the extent of soil and groundwater contamination from the renewable diesel fuel spill. Under WAC 173-340, a TEE is required to evaluate threats to plants, soil biota, and wildlife from contaminated soils at a cleanup site.

Site Description

The subject site consists of a single parcel that was operated as a bulk fuel terminal and commercial fueling facility until early 2018. The bulk fuel tanks have been removed while the commercial fueling station is still in operation. Site specifics include:

<u>Site Address:</u>	600 S Worthen St. Wenatchee, WA 98801 (Chelan County Assessor) or 3 Chehalis St, Wenatchee, WA 98801
<u>Current Owner:</u>	Coleman Services IV, LLC
<u>Tax Parcel Number:</u>	222011693005
<u>Legal Description:</u>	Section 11, Township 22 North, Range 20 East, W.M.
<u>Property Size:</u>	Approximately 1.27 acres
<u>Jurisdiction:</u>	City of Wenatchee

The subject site is situated between Chehalis Street to the north, Worthen Street to the east, and BNSF railroad to the west (Figure 2). To the east of Worthen St. is the Apple Capital Loop Trail, overhead electrical lines, a narrow vegetated riparian area, and a very steep slope to the Columbia River. Property east of the Apple Capital Loop Trail, including the vegetated riparian area, is owned by Chelan County PUD. Topography at the site is flat with stormwater directed to storm drains in the adjacent city streets.

METHODS

Desktop Review

Prior to visiting the subject site, LCG conducted a desktop review of readily available mapping resources and other pertinent information including:

- Chelan County GIS (<http://maps.co.chelan.wa.us/chelancountyGIS/>). This source provided parcel information, aerial photographs, physical attributes, and other information from the Chelan County Assessor.
- US Fish and Wildlife Service National Wetlands Inventory Wetlands Mapper (<https://www.fws.gov/wetlands/data/mapper.html>). This mapping source depicts wetlands and streams throughout the United States.
- US Department of Agriculture Natural Resources Conservation Service Web Soil Survey (<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>). This source depicts mapped soils including hydric soils throughout the United States.
- Washington Department of Natural Resources Forest Practices Application Mapping Tool (<https://fpamt.dnr.wa.gov/default.aspx>). This mapping source depicts streams and wetlands in Washington State.
- Washington Department of Fish and Wildlife Salmonscape (<http://apps.wdfw.wa.gov/salmonscape/map.html>). This mapping source depicts streams and fish distribution in Washington State.
- Washington Department of Fish and Wildlife Priority Habitat and Species (<http://apps.wdfw.wa.gov/phsontheweb/>). This mapping source depicts priority habitats and species throughout Washington State.

TEE PROCESS

The MTCA TEE process is designed to identify sites which have the potential to impact ecological receptors from surface and/or shallow contaminated soils. A seven step process is used to complete the TEE process.

Step 1 – Characterization of the Site

The Coleman Oil Company site has been properly characterized by the collection and analysis of groundwater samples, surface water samples, subsurface soil samples, shoreline soil samples, and sediment samples within and adjacent to the subject site (Figure 2). Results of these analyses indicate varying concentrations of:

- Gasoline Range Petroleum Hydrocarbons (GRPH)
- Diesel range petroleum hydrocarbons (DRPH)
- Oil Range Petroleum Hydrocarbons (ORPH)
- Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX)

Step 2 – Evaluation of Exclusions

To determine if a site qualifies for exclusion, the site is evaluated against four exclusions listed below and documented in the Terrestrial Ecological Evaluation Form (Appendix A). The Coleman Oil site in Wenatchee does not qualify for exclusion as summarized below:

Exclusion #1: Will all soil contamination be located at least 6 feet beneath the ground surface (conditional point of compliance)? **[NO]**

"Yes" to this question, the site qualifies for exclusion with institutional controls.

Will all soil contamination be located at least 15 feet beneath the ground surface? **[NO]**

"Yes" to this question, the site qualifies for exclusion, institutional controls not required.

Exclusion #2: Will all soil contamination be covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed? **[NO]**

"Yes" to this question qualifies for exclusion, with institutional controls.

Exclusion #3: Is there less than 1.5 acres of contiguous undeveloped land on the site, or within 500 feet of any area of the site affected by hazardous substances other than those listed in WAC 173-340-7491(1)(c)(ii)? **[NO]**

AND

Is there less than 0.25 acres of contiguous undeveloped land on or within 500 feet of any area of the site affected by hazardous substances listed in WAC 173-340-7491(1)(c)(ii)? **[NO]**

(Must answer "yes" to both questions to qualify for this exclusion. Other factors decide whether you will need institutional controls at your site if you use the exclusion.)

Exclusion #4: Are concentrations of hazardous substances in the soil less than or equal to natural background concentrations of those substances at the point of compliance? **[NO]**

“Yes” to this question qualifies for exclusion, institutional controls not required.

Step 3 – Select Evaluation Method

The TEE Form (Appendix A) is used to determine which evaluation method is most appropriate for the subject site.

Step 4 – Conduct the TEE

This step in the process determines if the (1) the TEE process can be ended, (2) if a simplified TEE is required, or (3) a site-specific TEE is required. The simplified TEE for the Coleman Oil site in Wenatchee can be ended according to the results for Table 749-1 (Appendix B). A detailed summary of answers listed in Table 749-1 is included in the Results and Discussion section.

Step 5 – Identify Areas of Potential Ecological Concern

Not required

Step 6 – Conduct the Feasibility Study

Not required

Step 7 – Document the Process

Not Required

RESULTS and DISCUSSION

LCG conducted a TEE at the Coleman Oil site in Wenatchee, Washington as part of the requirements of MTCA in WAC 173-340. The Coleman Oil site is located adjacent to the Columbia River that has a narrow riparian area providing limited habitat to terrestrial wildlife. Based on a review of site conditions, conversations with Ecology staff, and putting the site through the TEE process; it was determined that the site does not qualify for an exclusion and a simplified TEE for the Coleman Oil site in Wenatchee can be ended according to the results for Table 749-1 (Appendix B).

Table 749-1 Results

Question #1 – This question assigns points for the size (acres) of “undeveloped” land on and within 500 feet of a project site. Undeveloped land means land that is not covered with buildings, roads, paved areas or other barriers preventing wildlife from feeding on plants, earthworms, insects or other food in or on the soil. The only areas qualifying as

undeveloped lands at the project site is the riparian area along the Columbia River. This area is comprised of approximately 1.47 acres (Figure 3) thereby receiving a score of 7 points.

Question 2 – This question asks if the property is industrial or commercial. The subject site is classified as industrial property by the City of Wenatchee (2017),. The question does not make clear if the property is just the subject site or also includes the area within 500 feet of the subject site. Taking the more conservative approach, this question was assigned the lower score of 1 but an argument for a higher score of 3 could be made.

Question #3 – This question assigns points for the quality of habitat. A score of 2 was assigned as the habitat in the riparian area is neither high quality of low quality given location in the landscape.

Question 41 – This question asks if the undeveloped land is likely to attract wildlife. The answer is yes as birds and mammals can easily visit and utilize the riparian area along the Columbia River. A score of 1 point was assigned.

Question 5 – This question asks if a list of soil contaminants are present. None of the listed contaminants have been identified so a score of 4 points was assigned.

Question # – This question adds the scores from questions #2 through #5 which is 8 points. If this score is higher than the score listed in Question #1 (7 points), the simplified terrestrial ecological evaluation may be ended under WAC 173-34-7492(2)(a)(ii). Eight points is higher than 7 points so the simplified TEE for the Coleman Oil site in Wenatchee can be ended.

CONCLUSIONS

The simplified TEE for the Coleman Oil site in Wenatchee can be ended according to the results documented in Table 749-1 (Appendix B).

LIMITATIONS

The findings and conclusions contained in this document were based on information and data available at the time this document was prepared and evaluated using standard Best Professional Judgement. LCG assumes no responsibility for the accuracy of information and data generated by others. Local, State, and Federal regulatory agencies may or may not agree with the findings and conclusions contained in this document.

REFERENCES

Anderson, P., Meyer, S., Olson, P., Stockdale, E. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Shorelands and Environmental Assistance Program Washington State Department of Ecology Olympia, Washington. Publication no. 16-06-029. October 2016 Final Review.

Chelan County GIS Maps.

City of Wenatchee. 2017. <http://www.wenatcheewa.gov/home/showdocument?id=17440>

Revised Code of Washington (RCW) Chapter 70.105D.

Washington Administrative Code (WAC) Chapter 173-340.

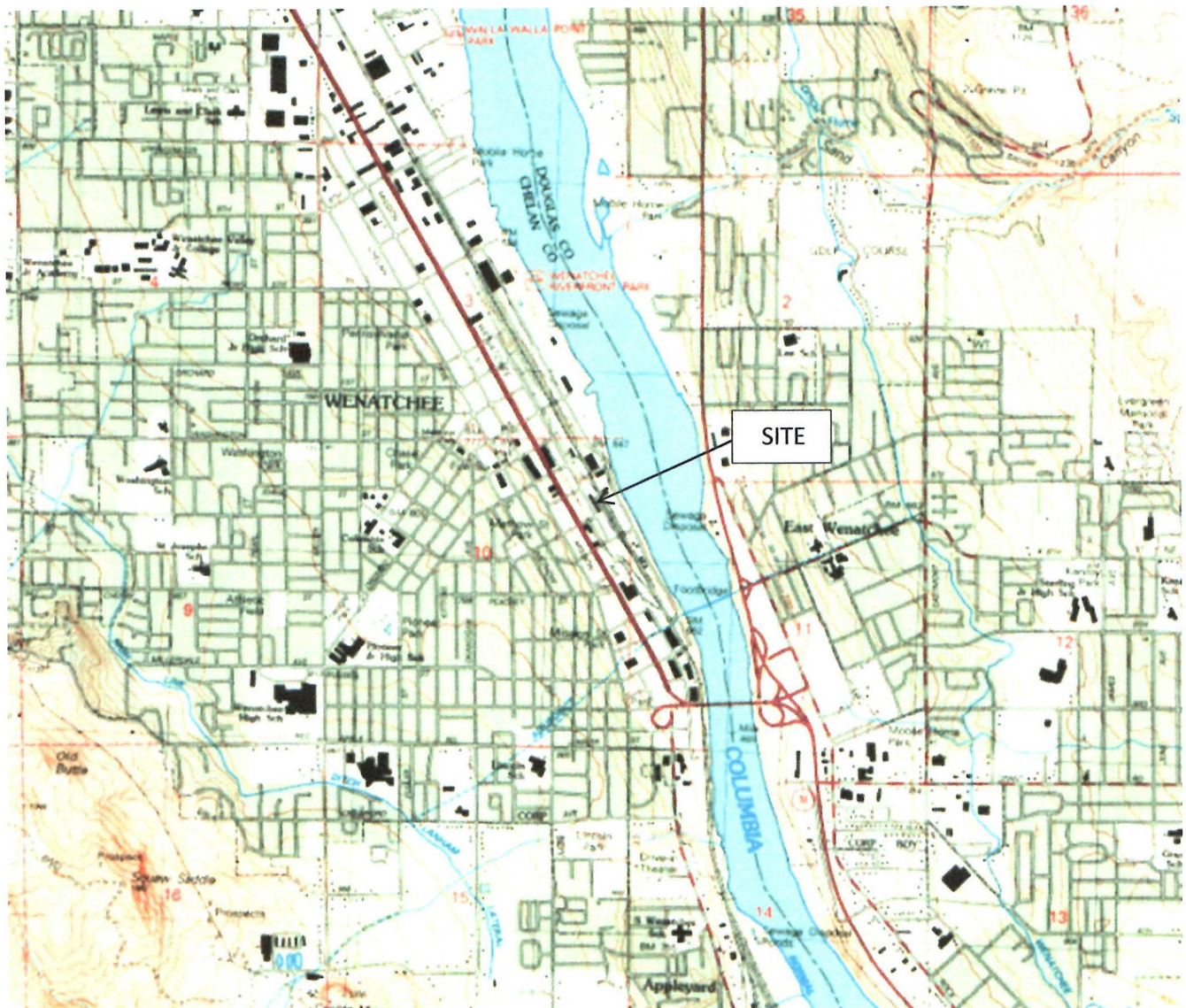
Wenatchee City Code. Title 12 – Environmental Protection.

FIGURES

Figure 1 – Site Location Map

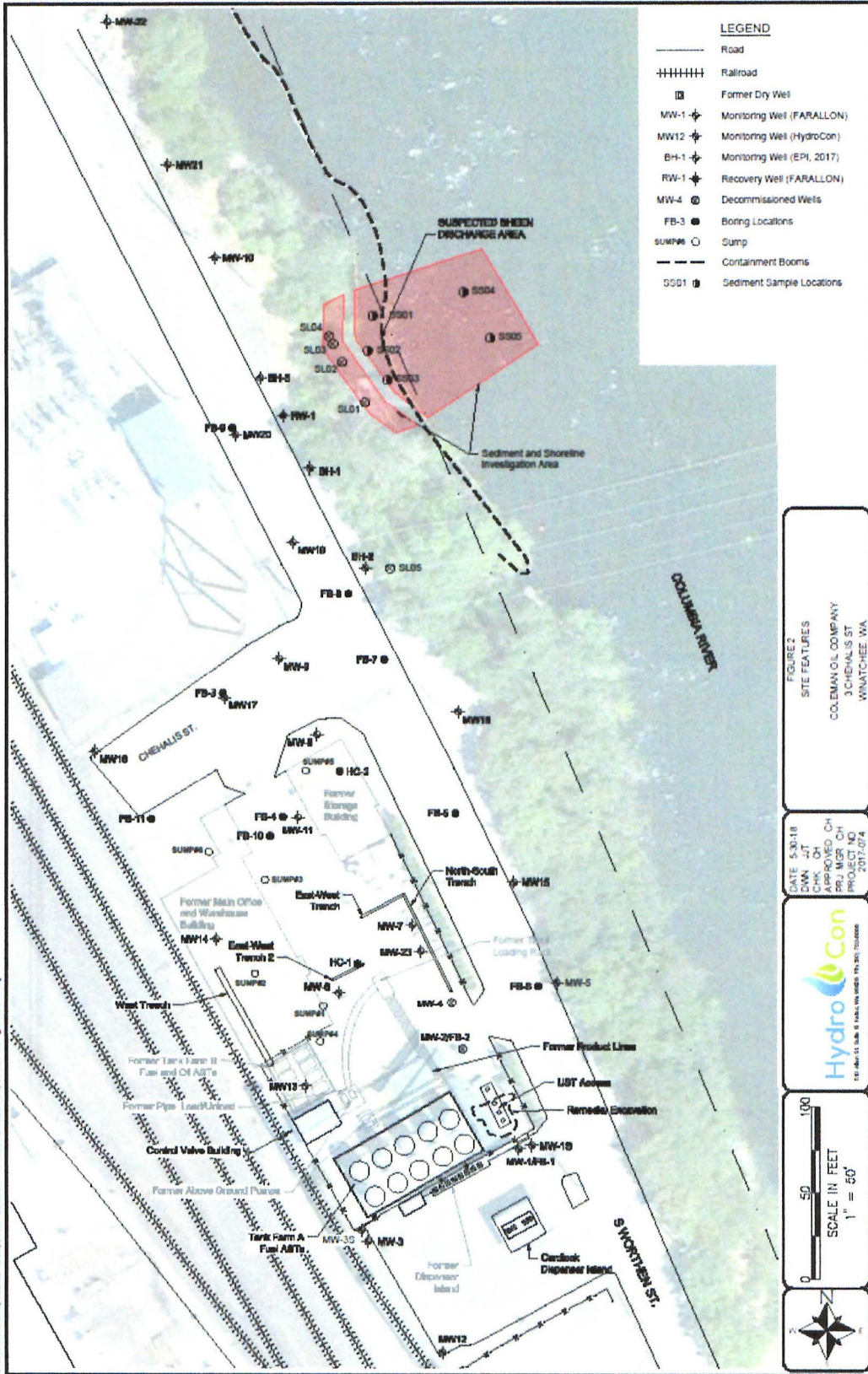
Figure 2 – Site Map

Figure 3 – Riparian Areas (Undeveloped Lands)

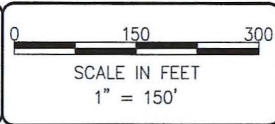
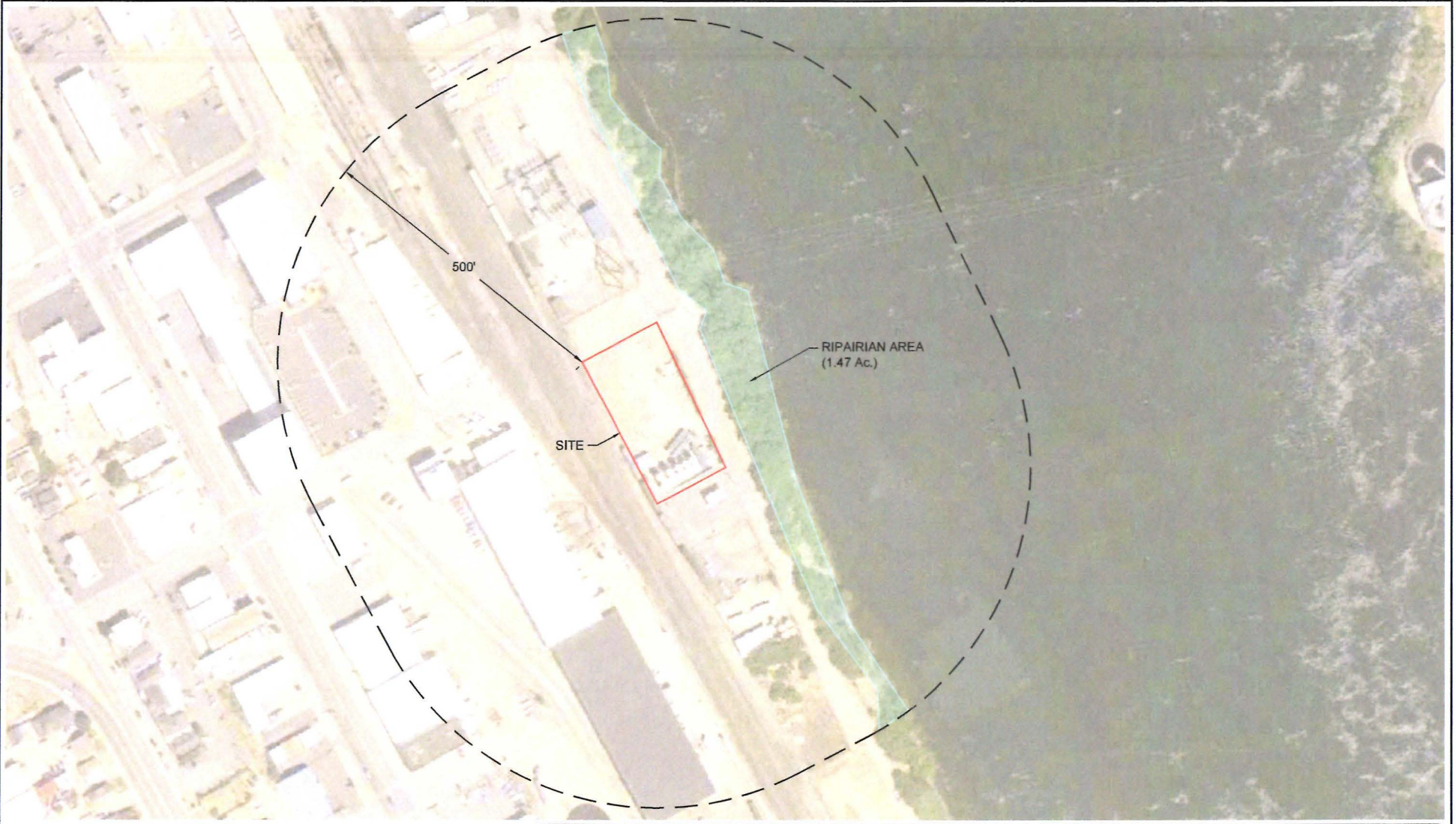


Loovit Consulting Group, LLC
Natural Resources & Project
Management
360.431.5118

Figure 1
Site Location Map



C:\Users\Loah\Desktop\Alocad\FlexHydrocon-Alocad\2017-074 Coleman Oil\2018\Aug_2018\0017-074_GM-000218.dwg



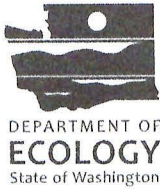
DATE: 8-30-18
DWN: JJT
CHK: TH
APPROVED: TH
PRJ. MGR: CH
PROJECT NO:
2017-074

FIGURE 3
RIPARIAN AREA

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

Appendix A

Terrestrial Ecological Evaluation Form



Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm.

Step 1: IDENTIFY HAZARDOUS WASTE SITE	
Please identify below the hazardous waste site for which you are documenting an evaluation.	
Facility/Site Name: Coleman Oil Biodiesel Spill	
Facility/Site Address: 3 Chehalis St, Wenatchee, WA 98801	
Facility/Site No: 83844381	VCP Project No.:

Step 2: IDENTIFY EVALUATOR		
Please identify below the person who conducted the evaluation and their contact information.		
Name: Timothy J. haderly	Title: Principal Environmental Scientist/Owner	
Organization: Loowit Consulting Group, LLC		
Mailing address: 312 Gray Road		
City: Castle Rock	State: WA	Zip code: 98611
Phone: 360.431.5118	Fax: N/A	E-mail: thaderly42@gmail.com

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

1. Does the Site qualify for an exclusion from further evaluation?

- Yes *If you answered "YES," then answer **Question 2**.*
- No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3B** of this form.*

2. What is the basis for the exclusion? Check all that apply. Then skip to **Step 4** of this form.

Point of Compliance: WAC 173-340-7491(1)(a)

- All soil contamination is, or will be,* at least 15 feet below the surface.
- All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

- All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

- There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.
- For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

- Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

[±] "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

[#] "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

- Yes *If you answered "YES," then answer **Question 2** below.*
- No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

- Yes *If you answered "YES," then answer **Question 3** below.*
- No *If you answered "NO," then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

- Yes *If you answered "YES," then answer **Question 4** below.*
- No *If you answered "NO," then answer **Question 5** below.*

4. If further evaluation was necessary, what did you do?

- Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*
- Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

5. If no further evaluation was necessary, what was the reason? Check all that apply. Then skip to **Step 4 of this form.**

Exposure Analysis: WAC 173-340-7492(2)(a)

- Area of soil contamination at the Site is not more than 350 square feet.
- Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

- No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

- No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

C. Site-specific evaluation. A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. See WAC 173-340-7493(1)(c).

1. Was there a problem? See WAC 173-340-7493(2).

- Yes *If you answered "YES," then answer **Question 2** below.*
- No *If you answered "NO," then identify the reason here and then skip to **Question 5** below:*
- No issues were identified during the problem formulation step.
 - While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

2. What did you do to resolve the problem? See WAC 173-340-7493(3).

- Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

3. If you conducted further site-specific evaluations, what methods did you use?

Check all that apply. See WAC 173-340-7493(3).

- Literature surveys.
- Soil bioassays.
- Wildlife exposure model.
- Biomarkers.
- Site-specific field studies.
- Weight of evidence.
- Other methods approved by Ecology. If so, please specify:

4. What was the result of those evaluations?

- Confirmed there was no problem.
- Confirmed there was a problem and established site-specific cleanup levels.

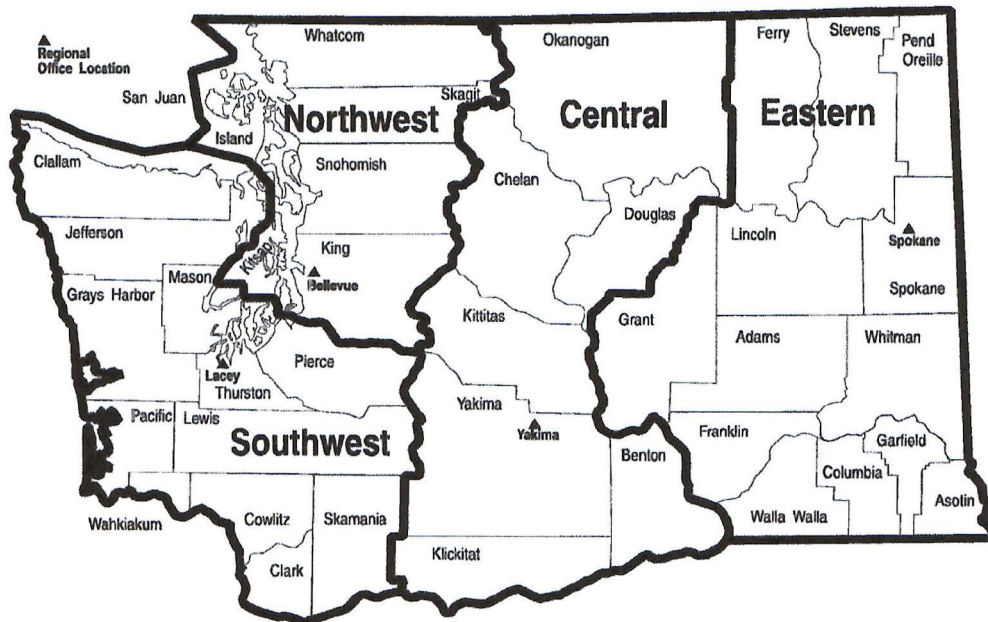
5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?

- Yes *If so, please identify the Ecology staff who approved those steps:*
- No

Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.

<p>Northwest Region: Attn: VCP Coordinator 3190 160th Ave. SE Bellevue, WA 98008-5452</p>	<p>Central Region: Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009</p>
<p>Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775</p>	<p>Eastern Region: Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295</p>



Appendix B

Table 749-1

Table 749-1
Simplified Terrestrial Ecological
Evaluation - Exposure Analysis Procedure
under WAC 173-340-7492 (2)(a)(ii).a

1.47 acres	Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre). "Undeveloped land" means land that is not covered by existing buildings, roads, paved areas or other barriers that will prevent wildlife from feeding on plants, earthworms, insects or other food in or on the soil.																				
7	<p>1) From the table below, find the number of points corresponding to the area and enter this number in the box to the right.</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Area (acres)</th> <th style="text-align: center;">Points</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0.25 or less</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">0.5</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">1.0</td> <td style="text-align: center;">6</td> </tr> <tr> <td style="text-align: center;">1.5</td> <td style="text-align: center;">7</td> </tr> <tr> <td style="text-align: center;">2.0</td> <td style="text-align: center;">8</td> </tr> <tr> <td style="text-align: center;">2.5</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="text-align: center;">3.0</td> <td style="text-align: center;">10</td> </tr> <tr> <td style="text-align: center;">3.5</td> <td style="text-align: center;">11</td> </tr> <tr> <td style="text-align: center;">4.0 or more</td> <td style="text-align: center;">12</td> </tr> </tbody> </table>	Area (acres)	Points	0.25 or less	4	0.5	5	1.0	6	1.5	7	2.0	8	2.5	9	3.0	10	3.5	11	4.0 or more	12
Area (acres)	Points																				
0.25 or less	4																				
0.5	5																				
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1.5	7																				
2.0	8																				
2.5	9																				
3.0	10																				
3.5	11																				
4.0 or more	12																				
1	2) Is this an industrial or commercial property? See WAC 173-340-7490 (3)(c). If yes, enter a score of 3 in the box to the right. If no, enter a score of 1.																				
2	3) Enter a score in the box to the right for the habitat quality of the site, using the rating system shown below. (High = 1, Intermediate = 2, Low = 3)																				
1	4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2. See footnote c.																				
4	5) Are there any of the following soil contaminants present: Chlorinated dibenzo-p-dioxins/dibenzofurans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.																				
8	6) Add the numbers in the boxes on lines 2 through 5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified terrestrial ecological evaluation may be ended under WAC 173-340-7492 (2)(a)(ii).																				

Footnotes:

a It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score (1) for questions 3 and 4.

b Habitat rating system. Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:

Low: Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.

High: Area is ecologically significant for one or more of the following reasons: Late-successional native plant communities present; relatively high species diversity; used by an uncommon or rare species; priority habitat (as defined by the Washington department of fish and wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.

Intermediate: Area does not rate as either high or low.

c Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use by mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.