

APPENDIX A

Arcadis Field Logs



DAILY LOG OF CONSTRUCTION

PROJECT Former unocal Edmonds Terminal

Contracting Officer's Representative

PARK		CONTRACT NO.	DATE 8/1/17
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER Sunny	TEMPERATURE		GROUND CONDITIONS <u>Dry</u> , Damp, Wet, Frozen, "Circle")
	High 84	Low 65	

Personnel Onsite / Visitors (time)	Materials <u>Imported</u> /Exported
Arcadis - Eric Krueger, Ryan Brauchla	• Mini mobile, hay bails, geo textile
Entact - Mike C, Diane, CJ, Ricardo, Kevin	fabric, waddle, generator, waste bin,
Chevron H&S - Chris	two honey buckets w/ two sanitation
	stations, work trailer w/ tools

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
Large Dozer				
Mini excavator				
work trailer				
2 mini mobile				
1 generator				
waste bin				
2 honey buckets				
2 Sanitation stations				
1 work trailer w/ tools				
4 Entact work Trucks				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former unocal Edmonds Terminal	
PARK	CONTRACT NO.	DATE 8/2/17	
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER Sunny	TEMPERATURE		GROUND CONDITIONS <u>Dry</u> Damp, Wet, Frozen, "Circle"
	High	Low	
	81	64	

Personnel Onsite / Visitors (time)	Materials <u>Imported</u> /Exported
Arcadis - Eric Krueger, Ryan Brauchla	2 nd Mobile mini, 2 nd generator, no parking
Entact - Mike, CJ, Ricardo, Diane, Kevin	Signs, brush hog, Summa canisters (3),
Chevron H&S - Chris	two more honey buckets (4 total),
Titan Electric	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 Large dozer				
Mini excavator				
2 mobile minis				
2 generators				
waste bin				
4 honey buckets				
2 sanitation stations				
1 skid steer w/ brush hog				
1 work trailer w/ tools				
4 Entact work trucks				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT <i>Former unocal Edmonds Terminal</i>	
PARK			CONTRACT NO.	DATE <i>8/3/17</i>
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>Sunny</i>	TEMPERATURE		GROUND CONDITIONS (<u>Dry</u>) Damp, Wet, Frozen, "Circle")	
	High <i>83</i>	Low <i>62</i>		
Personnel Onsite / Visitors (time)			Materials (<u>Imported</u>) Exported	
<i>Arcadis - Ryan Brauchla, Eric Krueger</i>			<i>Poly liner</i>	
<i>Entact</i>				
<i>chevron H₂S</i>				
EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<i>1 large dozer</i>				
<i>Mini excavator</i>				
<i>2 mobile mini's</i>				
<i>2 generators</i>				
<i>waste bin</i>				
<i>4 honey buckets</i>				
<i>2 sanitation stations</i>				
<i>1 skid steer w/ brush hog</i>				
<i>1 work trailer w/ tools</i>				
<i>4 Entact work trucks</i>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT Former unocal Edmonds Terminal	
PARK			CONTRACT NO.	DATE 8/4/17
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER Sunny & Smoky	TEMPERATURE		GROUND CONDITIONS <u>Dry</u> , Damp, Wet, Frozen, "Circle"	
	High	Low		
			84	61
Personnel Onsite / Visitors (time)			Materials <u>Imported</u> /Exported	
Arcadis - Eric Krueger			Import - fuel for the dozen mini excavator	
Entact -			generators, skidsteer, 307	
			Import excavator and skidsteer	
			export - mini excavator 390E & skidsteer	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
7 large dozer				
7 mini excavator				
2 make mini's				
2 generators				
waste bin				
4 honey buckets				
2 Sanitation Stations				
1 skidsteer w/ brush hog				
1 work trailer w/ tools				
4 Entact work trucks				
1 307 excavator				

CONTINUED ()

SIGNATURE _____ TITLE PROJECT SUPERVISOR/COR _____

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT Former Edmonds ^{unocal} Edmonds Terminal	
PARK			CONTRACT NO.	DATE 8/7/17
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER Sunny & Smoky	TEMPERATURE		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")	
	High 77	Low 59		
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
Arcadis - E. Krueger, R. Brauchla, S. Miles			Imported - 40 truck/trailer loads of saturated zone fill, tractor w/ side deck mower, cones, mats	
Entact				
Chevron H&S				
EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 Large dozer				
1 307 excavator				
2 Mobile mini's				
2 generators				
waste bin				
4 honey buckets				
2 sanitation stations				
1 skidsteer w/ brush hog				
1 work trailer w/ tools				
4 Entact trucks				
1 Tractor w/ side deck mower				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

PROJECT Former uncoal Edmonds Terminal

Contracting Officer's Representative

PARK

CONTRACT NO.

DATE 8/8/17

CONTRACTOR

CONTRACTOR REPRESENTATIVE ON JOB

WEATHER

Sunny & Smoky

TEMPERATURE

High

Low

GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")

Personnel Onsite / Visitors (time)

Materials Imported/Exported

Arcadis - E. Krueger, R. Brauchla, S. Miles

Imported - 38 trucks/trailers loads of

Entact

Saturated Zone fill, rain-for-rent

chevron HES

pumps & wheel wash material

EQUIPMENT ON JOB

Time

Truck Count

Import

Export

Work Completed (Samples Collected)

1 large dozer

1 307 excavator

2 mobile mini's

2 generators

waste bin

4 honey buckets

2 Sanitation Stations

1 skidsteer w/ ~~mower~~ brush hog

1 work trailer w/ tools

wheel wash

4 Entact trucks

1 tractor w/ side deck ~~mower deck~~

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

PROJECT Former unocal Edmonds Terminal

Contracting Officer's Representative

PARK

CONTRACT NO.

DATE 8/9/17

CONTRACTOR

CONTRACTOR REPRESENTATIVE ON JOB

WEATHER

Sunny & Smoky

TEMPERATURE

High

Low

74

59

GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")

Personnel Onsite / Visitors (time)

Materials Imported/Exported

Arcadis - E. Krueger, R. Brauchla, S. Miles

Entact

Chevron HES

Imported - Water tank

EQUIPMENT ON JOB

Time

Truck Count

Import

Export

Work Completed (Samples Collected)

1 large dozer

1 307 excavator

2 mobile mini's

2 generators

waste bin

4 honey buckets

2 sanitation stations

1 skidsteer w/ brush hog

1 work trailer w/ tools

wheel wash

4 Entact trucks

1 tractor w/ side deck mower

1 water tank

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT <u>Former unocal Edmonds Terminal</u>	
PARK	CONTRACT NO.		DATE <u>8/10/17</u> <u>8/11/17</u>
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <u>Clear & Sunny. Smoky</u>	TEMPERATURE		GROUND CONDITIONS <u>Dry</u> , Damp, Wet, Frozen, "Circle")
	High <u>75</u>	Low <u>58</u>	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
<u>Arcadis - E. Krueger, S. Miles, R. Brauchler</u>	<u>Imported - 3 truck loads of #8 x #30</u>
<u>Entact</u>	
<u>chevron HES</u>	
	<u>Fill sand, 1 truck load of AASHTO #8 gravel</u>
	<u>fuel for skidsteer, 962 dozer, 307 excavator,</u>
	<u>John Deere tractor & 2 generators</u>

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<u>1 large dozer</u>				
<u>1 307 dozer</u>				
<u>2 mobile mini's</u>				
<u>2 generators</u>				
<u>waste bin</u>				
<u>4 honey buckets</u>				
<u>2 Sanitation stations</u>				
<u>1 skidsteer w/ brush hog</u>				
<u>1 work trailer w/ tools</u>				
<u>wheel wash</u>				
<u>4 Entact trucks</u>				
<u>1 tractor w/ side deck mower</u>				
<u>1 water tank</u>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

PROJECT Former unocal Edmonds Terminal

Contracting Officer's Representative		CONTRACT NO.		DATE
PARK				8/11/17
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB		
WEATHER	clear & Sunny, slightly smoky	TEMPERATURE		GROUND CONDITIONS <u>Dry</u> , Damp, Wet, Frozen, "Circle"
		High	Low	
		74	56	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis - E. Krueger, S. Miles, R. Brauchly Entact	Imported - 1 generator, 1 bucket & forks for the skidsteer
Chevron HES	Exported - John Deere Tractor w/ side deck mower & brush hog attachment

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 large dozer				
1 307 excavator				
2 mobile mini's				
3 generators				
waste bin				
4 honey buckets				
2 sanitation stations				
1 skidsteer				
1 work trailer w/ tools				
wheel wash				
4 Entact trucks				
1 water tank				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT Former Naval Edmonds Terminal	
PARK		CONTRACT NO.		DATE 8-14-2017
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER partly cloudy	TEMPERATURE		GROUND CONDITIONS Dry, (Damp), Wet, Frozen, "Circle"	
	High 71	Low 59		
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
Arcadis - R. Bravchla, S. Miles Entact			• Imported 1 Adler Tank	
EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 large dozer				
1 307-dozer				
2 mobile minis				
3 generators				
1 waste bin				
4 honey buckets				
2 handwash stations				
1 skid steer				
1 work trailer (with racks)				
1 wheel wash				
4 Entact trucks				
1 tractor				
1 water tank				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT <i>Former Urocal Edwards Terminal</i>	
PARK			CONTRACT NO.	DATE <i>8-15-2017</i>
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>partly cloudy in AM clearing in afternoon</i>		TEMPERATURE High <i>74</i> Low <i>61</i>		GROUND CONDITIONS (<u>Dry</u> , Damp, Wet, Frozen, "Circle")
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
<i>Arcadis - R. Bravchla, G. Kruger, S. Miles</i>			<i>•Imported• 2 Adler Tanks, 5 loads of rock, 18 loads of saturated zone fill</i>	
<i>Entact</i>				
<i>Titan</i>				
<i>Chevron HES - Chris Vela</i>				
<i>Clew creek</i>				
EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<i>1 large dozer</i>				
<i>1 307 dozer</i>				
<i>1 skid steer</i>				
<i>2 mobile minis</i>				
<i>2 hand wash stations</i>				
<i>4 portable toilets</i>				
<i>3 generators</i>				
<i>1 wheel wash station</i>				
<i>3 Adler water tanks</i>				
<i>1 Work trailer with tools</i>				
<i>1 waste bin</i>				
<i>3 Entact Trucks</i>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former Naval Edmonds Terminal	
PARK		CONTRACT NO.	DATE 8-16-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER clear & sunny	TEMPERATURE		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")
	High 71	Low 57	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis - R. Bravchla, E Krueger, S Miles	• Imported - Jersey barriers, HDPE pipe, 21 truck loads of saturated zone fill
Entact -	
Chevron HES - C. Vela	
clearcreek	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 large dozer				
1 307 dozer				
1 skid steer				
2 mobile minis				
2 handwashing stations				
4 portable toilets				
3 generators				
1 wheel wash station				
3 Adler water tanks				
1 Work trailer w/ tools				
1 waste bin				
3 Entact Trucks				
2 Large Portable Pumps				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former unocal Edmonds Terminal	
PARK		CONTRACT NO.	DATE 8-17-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER clear & Sunny	TEMPERATURE	GROUND CONDITIONS (Dry Damp, Wet, Frozen, "Circle")	
	High 70 Low 59		

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis- E. Krueger, S. Miles, R. Brauchler, P. Campbell Entact Chevron HES Clearcreek	* Imported - Remaining Jersey barriers, fire cabinet &

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 Large dozer				
1 307 excavator				
1 skid steer				
2 mobile mini's				
2 sanitation stations				
4 honey buckets				
3 generators				
1 wheel wash				
3 Adler water tanks				
1 work trailer w/ tools				
1 waste bin				
3 Entact trucks				
2 large portable pumps				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former Unocal Edwards Terminal	
PARK	CONTRACT NO.		DATE 08-18-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER Clear & calm in the morning	TEMPERATURE		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")
	High	Low	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Entact	* Imported - fusion machine, generator, fuel, parts for TWTS
Arcadis	
Titan	
Clearcreek	
Nelson Petrol @ 0935	
Pappas @ 1000 (fusion machine delivery)	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 large dozer				TWTS set up
1 307 dozer				
1 skid steer				Fusion machine/generator delivered
4 generators	(1@1000)			
2 pumps				Wheel wash hooked up
2 office trailers				
2 handwash stations				
4 portable toilets				
3 Entact trucks				
wheel wash station				
fusion machine	(1000)			
temporary water treatment system				
roll-off dumpster				
work trailer				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT <i>Former unocal Edmonds Terminal</i>	
PARK			CONTRACT NO.	
CONTRACTOR			DATE <i>08-21-2017</i>	
WEATHER <i>Clear & Sunny</i>		TEMPERATURE High Low		CONTRACTOR REPRESENTATIVE ON JOB
Personnel Onsite / Visitors (time)			GROUND CONDITIONS (Wet , Damp, Wet, Frozen, "Circle")	
<i>Arcadis</i>			Materials Imported/Exported	
<i>Entact</i>			<i>Imported - 1 320 excavator</i>	
<i>Chevron HES</i>				
EQUIPMENT ON JOB		Truck Count		Work Completed (Samples Collected)
	Time	Import	Export	
<i>1 large dozer</i>				
<i>1 307 excavator</i>				
<i>1 skid steer</i>				
<i>4 generators</i>				
<i>2 diesel pumps</i>				
<i>2 mobile units</i>				
<i>2 hand wash</i>				
<i>4 Entact trucks</i>				
<i>wheel wash</i>				
<i>Fusion machine</i>				
<i>TWTS</i>				
<i>waste bin</i>				
<i>1 work trailer</i>				
<i>1 320 excavator</i>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT <i>Former unocal Edmonds Terminal</i>	
PARK			CONTRACT NO.	DATE <i>08-22-2017</i>
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>Clear & Sunny</i>	TEMPERATURE		GROUND CONDITIONS <i>(Dry, Damp, Wet, Frozen, "Circle")</i>	
	High <i>83</i>	Low <i>60</i>		
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
<i>Arcadis</i>				
<i>Entact</i>				
<i>clearcreek</i>				
<i>chevron HES</i>				
EQUIPMENT ON JOB		Truck Count		Work Completed (Samples Collected)
	Time	Import	Export	
<i>1 large dozer</i>				
<i>1 307 excavator</i>				
<i>1 skid steer</i>				
<i>4 generators</i>				
<i>2 diesel pumps</i>				
<i>2 mobile mini's</i>				
<i>2 hand wash stations</i>				
<i>4 Entact trucks</i>				
<i>wheel wash</i>				
<i>Fusion machine</i>				
<i>TWTS</i>				
<i>waste bin</i>				
<i>1 work trailer</i>				
<i>1 320 excavator</i>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT <i>Former Unocal Edmonds Terminal</i>	
PARK		CONTRACT NO.	DATE <i>08-23-2017</i>
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>clear & sunny</i>	TEMPERATURE		GROUND CONDITIONS <i>(Dry, Damp, Wet, Frozen, "Circle")</i>
	High <i>71</i>	Low <i>59</i>	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
<i>Arcadis</i>	<i>Imports - none</i>
<i>Entact</i>	
<i>Chevron HES</i>	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<i>large dozer</i>				
<i>307 excavator</i>				
<i>320 excavator</i>				
<i>skid steer</i>				
<i>work trailer</i>				
<i>4 Entact trucks</i>				
<i>2 mobile offices</i>				
<i>2 bathroom facilities (w/2 toilets & 1 hand wash)</i>				
<i>TWTS</i>				
<i>wheel wash</i>				
<i>fusion machine</i>				
<i>Waste Bin</i>				
<i>4 generator s</i>				
<i>2 diesel pumps</i>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative PROJECT
Former Unocal Edwards Terminal

PARK CONTRACT NO. DATE
08-24-2017

CONTRACTOR CONTRACTOR REPRESENTATIVE ON JOB

WEATHER mostly cloudy	TEMPERATURE		GROUND CONDITIONS <u>dry</u> , Damp, Wet, Frozen, "Circle"
	High 67	Low 58	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Chevron - HES, visitors, PMs	Imports - none (bathrooms serviced)
Arcadis - E. Krueger, S. Miles, R. Braubler, M. Frankleton, J. Little, S. Zorn, A. Greenly	
Entact -	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 large dozer				Work completed - HDPE pipe welded & moved
1 307 excavator				
1 320 excavator				
1 skid steer				
4 generators				
2 diesel pumps				
2 mobile minis				
2 bathroom stations (2 toilets & hand wash)				
Entact Trucks				
Wheel Wash				
Fusion Machine				
Temporary Water Treatment System (TWS)				
Waste Bin				
Work Trailer				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT Former Unocal Edmonds Terminal	
PARK			CONTRACT NO.	DATE 08-25-2017
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER cloudy in am clear in pm		TEMPERATURE High 69 Low 55		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle") Dry
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
Arcadis - Branchle, Frackelton, Krueger, Miles, Zorn Entact - Ecology			Imported: one 8" Pipe from Puget Sound Pump	
EQUIPMENT ON JOB			Work Completed (Samples Collected)	
	Time	Truck Count		
		Import	Export	
skid steer				Layed HDPE piping in Willow Creek, constructed berms
large dozer				
307 excavator				
320 excavator				
4 Entact Trucks				
4 generators				
2 mobile minis				
TWTS				
wheel wash				
fusion machine				
waste bin				
4 portable toilets				
2 hand washes				
2 diesel pumps				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former Naval Edmonds Terminal	
PARK		CONTRACT NO.	DATE 8-28-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER Sunny & clear	TEMPERATURE		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")
	High 84	Low 64	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis	Imports: 335 F Excavator crane mats
Entact	
Chevron	
Entact Otak	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
skid steer				Emergency drill, build hydraulic isolation barrier, place control points with OTAK
large dozer				
307 excavator				
320 excavator				
4 Entact trucks				
4 generators				
2 mobile units				
TWTS				
wheel wash				
fusion machine				
Waste bin				
4 portable toilets				
2 handwash stations				
2 diesel pumps				
335 excavator	0930			

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former Naval Edmonds Terminal	
PARK		CONTRACT NO.	DATE 8-29-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER	TEMPERATURE		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")
	High 87	Low 68	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Entact -	No import/export - gas delivery
Arcadis -	
Chevron -	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
skid steer				First day of Chevron audit
large dozer				
307 excavator				Started construction of jersey barrier barricade in DB-1. Arcadis begins fish seining
320 excavator				
335 excavator				
4 Entact Trucks				
4 generators				
2 bathroom setups (2 toilets, 1 hand wash)				
2 diesel pumps				
2 office trailers				
TWTS				
wheel wash				
fusion machine				
waste bin				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former Unocal Edmonds Terminal	
PARK		CONTRACT NO.	DATE 8-30-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER AM - misty rain		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")	
		TEMPERATURE	
		High 73	Low 60

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Entact - Mike, Dane, CJ, Mick, Joe, Ricardo, Kevin	Imports - none
Avacadis - Ryan, Sam, Eric, Aaron, Matt, Alex	
Cherron - Kim, Julie, Mick, Valerie	Exports - fusion machine/generator

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
skid steer				Day 2 of audit - Entact fixes Willow creek coffer dams finishes DB-1 jersey barrier installation
large dozer				
3 excavators				
4 trucks				
4 generators				
fusion machine				
2 office trailers				
2 bathroom stations				
4 generators				
TWTS				
wheel wash				
waste bin				
work trailer				
2 diesel pumps				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative

PROJECT

Former Naval Edmonds Terminal

PARK

CONTRACT NO.

DATE

8-31-2017

CONTRACTOR

CONTRACTOR REPRESENTATIVE ON JOB

WEATHER

AM - cloudy, calm misty
PM - sunny, breezy

TEMPERATURE

High

Low

70

61

GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")

Personnel Onsite / Visitors (time)

Materials Imported/Exported

Entact - Mike, Dane, CJ, Ricardo, Joe, Nick, Kevin

no imports/exports

Arcadis - Sam, Ryan, Eric, Matt, Alex, Jason

Chevron - Kim Joltz

Clearcreek -

WM - truck boss & 5 drivers

Landau - Evelyn

EQUIPMENT ON JOB

Time

Truck Count

Import

Export

Work Completed (Samples Collected)

skid steer

large dozer

3 excavators

TWTS

wheel wash

work trailer

2 office trailers

2 bathroom stations (1hr, 2hr)

4 generators

4 Entact trucks

waste bin

2 diesel pumps

Broke ground on excavation, oriented waste management, completed fish seining, inspect & walk down TWTS

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former Unocal Edmonds Terminal	
PARK		CONTRACT NO.	DATE 9-1-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER clear & sunny	TEMPERATURE High Low 57		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arceadis - Sam, Ryan, Alex	no imports/exports
Entacta - Mike, Diane, Tim, Nick, Kevin	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
289D skid steer				Continue excavation - excavate in grid cells
307F excavator				
320F excavator				
962M dozer				Delineate red zone/orange zone green zone
335F excavator				
TWTS				
wheel wash				
2 bathrooms with 2 toilets, handwash sink				
2 office trailers				
1 work trailer				
4 generators				
3 Entact trucks				
waste bin				
2 diesel pumps				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT Former Edwards Unacc'd Edwards Terminal	
PARK			CONTRACT NO.	
CONTRACTOR			DATE 9-5-2017	
CONTRACTOR REPRESENTATIVE ON JOB				
WEATHER AM - high smoke		TEMPERATURE		GROUND CONDITIONS <input checked="" type="radio"/> Dry, Damp, Wet, Frozen, "Circle"
		High	Low 69	
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
Arcadis - Ryan			Imports - 320D long-arm excavator	
Entact - Mike, CJ, Joe				
Clearcreek - Cory				
Darling Sons - Matthew (@0930)				
Nelson Petroleum - Guy (@1110)				
EQUIPMENT ON JOB			Work Completed (Samples Collected)	
		Truck Count		
		Import	Export	
skid steer				Pumped down DB-2 into TWTS
large dozer				Pumped down Willow Creek into ballast track
4 excavators (307, 320, 335, 320D)		1		
2 Entact trucks				
3 generators				
2 office trailers				
wheel wash				
2 bathroom stations (2 toilets, 1 hand wash, 1 pipe)				
TWTS				
2 diesel pumps				
trash pump				
work trailer				
waste bin				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT Former unocal Edmonds Terminal	
PARK		CONTRACT NO.		DATE 09-06-2017
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER Overcast & smoky		TEMPERATURE		GROUND CONDITIONS Dry, Damp, Wet, Frozen, "Circle"
		High	Low	
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
Arcadis			• Imported: CAT 323 Excavator	
Entact			• Exported: CAT 320 Excavator	
Chevron HES				
EQUIPMENT ON JOB		Truck Count		Work Completed (Samples Collected)
Time		Import	Export	
1 skid steer				
1 large dozer				
1 307 excavator				
1 320 D excavator				
1 335 excavator				
3 generators				
2 mobile mini's				
1 wheel wash				
1 X honey buckets & 2 Sanitation stations				
TWTS				
2 diesel pumps				
1 trash pump				
1 work trailer				
1 waste bin				
4 Entact trucks				
CONTINUED ()				
SIGNATURE			TITLE PROJECT SUPERVISOR/COR	

370 323
335

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former unocal Edmonds Terminal	
PARK		CONTRACT NO.	DATE 09-07-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER Overcast & smoky	TEMPERATURE	GROUND CONDITIONS Dry, Damp, Wet, Frozen, "Circle")	
	High Low		

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis	
Entact	
Chevron HES	
clearcheck	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 skid steer				
1 large dozer				
1 307 excavator				
1 320D Excavator				
1 335 excavator				
3 generators				
2 mobile mini's				
1 wheel wash				
4 X honey buckets	2 Sanitation stations			
TWTS				
2 diesel pumps				
1 trash pump				
1 work trailer				
1 waste bin				
4 Entact trucks				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former Unocal Edmonds Terminal	
PARK		CONTRACT NO.	DATE 09-08-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER Smoky & partly cloudy	TEMPERATURE		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")
	High	Low	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis	• Exported 307 Excavator & 8 loads of Soil
Entact	• Imported 323 Excavator
Chevron HES	
clearcreek	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 skid steer				
1 large dozer				
1 323 Excavator				
1 320D Excavator				
1 335 Excavator				
3 generators				
2 mobile mini's				
1 wheel wash				
4 honey buckets & 2 sanitation stations				
TWTS				
2 diesel pumps				
1 trash pump				
1 work trailer				
1 waste bin				
4 Entact trucks				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative

PROJECT Former Unocal Edmonds Terminal

PARK

CONTRACT NO.

DATE 09-11-2017

CONTRACTOR

CONTRACTOR REPRESENTATIVE ON JOB

WEATHER

overcast in AM
clear & sunny in PM

TEMPERATURE

High Low

GROUND CONDITIONS (Dry) Damp, Wet, Frozen, ("Circle")

Personnel Onsite / Visitors (time)

Materials Imported/Exported

Arcadis

• Exported 9 loads of soil

Entact

chevron HES

EQUIPMENT ON JOB

Time

Truck Count

Import

Export

Work Completed (Samples Collected)

1 skid steer

1 large dozer

1 323 excavator

1 320D excavator

1 335 excavator

3 generators

2 mobile mini's

1 wheel wash

4 honey buckets / 2 sanitations stations
TWTS

2 diesel pumps

1 trash pump

1 work trailer

1 waste bin

4 Entact trucks

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Former unocal Edmonds Terminal	
PARK	CONTRACT NO.	DATE 09-12-2017	
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER overcast in AM clear & Sunny in PM	TEMPERATURE	GROUND CONDITIONS <u>Dry</u> , Damp, Wet, Frozen, ("Circle")	
	High Low		

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis	• Exported: 9 loads of soil
Entact	
chevron HES	
clear creek	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 skid steer				
1 large dozer				
1 ³²³ 307 excavator				
1 3200 excavator				
1 335 excavator				
3 generators				
2 mobile mini's				
1 wheel wash				
4 honey buckets / 2 sanitation stations				
TWIS				
2 diesel pumps				
1 trash pump				
1 work trailer				
1 waste bin				
4 contact trucks				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT <i>Former unocal Edmonds Terminal</i>	
PARK			CONTRACT NO.	
CONTRACTOR			DATE <i>09-13-2017</i>	
CONTRACTOR REPRESENTATIVE ON JOB			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>partly cloudy and sunny</i>		TEMPERATURE		GROUND CONDITIONS <i>Dry, Damp, Wet, Frozen, "Circle"</i>
		High	Low	
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
<i>Arcadis</i>			* Imported: <i>7 loads of 8129 saturated</i>	
<i>Entact</i>			<i>Zone fill</i>	
<i>Chevron HES</i>			* Exported: <i>13 loads of soil</i>	
<i>Clear creek</i>				
EQUIPMENT ON JOB		Truck Count		Work Completed (Samples Collected)
		Import	Export	
<i>1 skid steer</i>				
<i>1 large dozer</i>				
<i>1 323 excavator</i>				
<i>1 320D excavator</i>				
<i>1 335 excavator</i>				
<i>3 generators</i>				
<i>2 mobile mini's</i>				
<i>1 wheel wash</i>				
<i>4 honey buckets / 2 sanitation stations</i>				
<i>TWTS</i>				
<i>2 diesel pumps</i>				
<i>1 trash pump</i>				
<i>1 work trailer</i>				
<i>1 waste bin</i>				
<i>4 Entact trucks</i>				
CONTINUED ()				
SIGNATURE			TITLE PROJECT SUPERVISOR/COR	

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT Former unocal Edmonds Terminal	
PARK			CONTRACT NO.	DATE 09-14-2017
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER clear & Sunny	TEMPERATURE		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle") Dry	
	High	Low		
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
Arcadis			* Imported - 9 loads of 8/29 saturated	
Entact			Zone fill	
Chevron HES			* Exported - 20 loads of soil	
Clearcreek				
EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 skid steer				
1 large dozer				
1 323 excavator				
1 320D excavator				
1 335 excavator				
3 generators				
2 mobile mini's				
1 wheel wash				
4 honey buckets / TWTS	2 sanitation stations			
2 diesel pumps				
1 trash pump				
1 waste bin				
1 work trailer				
4 Entact trucks				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT Former unocal Edmonds Terminal	
PARK			CONTRACT NO.	DATE 09-15-2017
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER clear & Sunny		TEMPERATURE High Low		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle") Dry
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
Arcadis			• Imported - 16 loads of 8129 saturated	
Entact			Zone fill	
Chevron HES			• Exported - 19 loads of soil	
Clearcreek				
EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 Skid steer				
1 large dozer				
1 323 excavator				
1 320D excavator				
1 335 excavator				
3 generators				
2 mobile mini's				
1 wheel wash				
4 honey buckets / TWTS	2 Sanitation Stations			
2 diesel pumps				
1 trash pump				
1 waste bin				
1 work trailer				
4 Entact trucks				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT <i>Former unocal Edmonds Terminal</i>	
PARK		CONTRACT NO.	DATE <i>09-18-2017</i>
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>partly cloudy</i>	TEMPERATURE		GROUND CONDITIONS <i>(Dry, Damp, Wet, Frozen, "Circle")</i>
	High	Low	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
<i>Arcadis</i>	<i>Imported - C544B compactor & 22 loads of 8129 saturated zone fill</i>
<i>Entact</i>	
<i>Clear Creek</i>	<i>Exported - 11 loads of soil</i>

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<i>1 skid steer</i>				
<i>1 large dozer</i>				
<i>1 323 excavator</i>				
<i>1 3200 excavator</i>				
<i>1 335 excavator</i>				
<i>3 generators</i>				
<i>2 mobile mini's</i>				
<i>1 wheel wash</i>				
<i>4 honey buckets / 2 hand washes</i>				
<i>TWTS</i>				
<i>2 diesel pumps</i>				
<i>1 trash pump</i>				
<i>1 waste bin</i>				
<i>1 work trailer</i>				
<i>4 Entact trucks</i>				
<i>1 C544B compactor</i>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative

PROJECT Former Unocal Edmonds Terminal

PARK

CONTRACT NO.

DATE 09-19-2017

CONTRACTOR

CONTRACTOR REPRESENTATIVE ON JOB

WEATHER

Partly cloudy, afternoon rain

TEMPERATURE

High Low

GROUND CONDITIONS Dry, Damp, Wet, Frozen, (Circle)

Personnel Onsite / Visitors (time)

Materials Imported/Exported

Arcadis

Imported - 8 loads of 8126 Berm Fill &

Entact

4 loads of 8129 saturated zone fill

Chevron HES

Exported - 24 loads of soil

clear creek

EQUIPMENT ON JOB

Time

Truck Count

Import

Export

Work Completed (Samples Collected)

1 skid steer

1 large dozer

1 323 excavator

1 3200 excavator

1 335 excavator

3 generators

2 mobile mini's

1 wheel wash

4 honey buckets / 2 hand washes

TWTS

2 diesel pumps

1 basin pump

1 waste bin

1 work trailer

4 Entact trucks

1 CS44B compactor

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT <i>Former unocal Edmonds Terminal</i>	
PARK		CONTRACT NO.	DATE <i>09-20-2017</i>
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>partly cloudy</i>	TEMPERATURE		GROUND CONDITIONS <i>Dry, Damp, Wet, Frozen, "Circle"</i>
	High	Low	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
<i>Arcadis</i>	<i>• Imported - 13 loads of 8129 saturated zone fill</i>
<i>Entact</i>	
<i>Chevron HES</i>	<i>• Exported - 30 loads of soil 31</i>
<i>Clearcreek</i>	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<i>1 Skid steer</i>				
<i>1 large dozer</i>				
<i>1 323 excavator</i>				
<i>1 3200 excavator</i>				
<i>1 335 excavator</i>				
<i>3 generators</i>				
<i>2 mobile mini's</i>				
<i>1 wheel wash</i>				
<i>4 honey buckets / 2 hand washes</i>				
<i>TWTS</i>				
<i>2 diesel pumps</i>				
<i>1 trash pump</i>				
<i>1 waste bin</i>				
<i>1 work trailer</i>				
<i>4 Entact trucks</i>				
<i>1 CS44B compactor</i>				

CONTINUED ()

SIGNATURE	TITLE PROJECT SUPERVISOR/COR
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DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT <i>Edmonds Terminal</i>	
PARK			CONTRACT NO.	DATE <i>09-21-2017</i>
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>Clear & Sunny</i>	TEMPERATURE		GROUND CONDITIONS (<u>dry</u> , Damp, Wet, Frozen, "Circle")	
	High	Low		
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
<i>Arcadis</i>			<i>• Imported - 20 loads of 8129 Saturated zone fill • Exported - 32 loads of soil</i>	
<i>Entact</i>				
<i>Chevron HES</i>				
<i>Clearcreek</i>				
EQUIPMENT ON JOB		Truck Count		Work Completed (Samples Collected)
	Time	Import	Export	
<i>1 Skid steer</i>				
<i>1 large dozer</i>				
<i>1 323 excavator</i>				
<i>1 320D excavator</i>				
<i>1 335 excavator</i>				
<i>3 generators</i>				
<i>2 mobile mini's</i>				
<i>1 wheel wash</i>				
<i>4 honey buckets / 2 hand washes</i>				
<i>TWTS</i>				
<i>2 diesel pumps</i>				
<i>1 trash pump</i>				
<i>1 work trailer</i>				
<i>4 Entact trucks</i>				
<i>1 CS44B compactor</i>				
<i>1 waste bin</i>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative

PROJECT *Edmonds Terminal*

PARK

CONTRACT NO.

DATE

09-22-2017

CONTRACTOR

CONTRACTOR REPRESENTATIVE ON JOB

WEATHER

clear & Sunny

TEMPERATURE

High

Low

GROUND CONDITIONS (*dry*, Damp, Wet, Frozen, "Circle")

Personnel Onsite / Visitors (time)

Materials Imported/Exported

Arcadis

• Imported - 26 loads of 8129

Entact

Saturated zone fill

clearcreek

• Exported - 30 loads of soil

EQUIPMENT ON JOB

Time

Truck Count

Import

Export

Work Completed (Samples Collected)

1 skid steer

1 large dozer

1 323 excavator

1 320D excavator

1 335 excavator

3 generators

2 mobile mini's

1 wheel wash

*4 honey buckets / 2 hand washes
TWTS*

2 diesel pumps

1 trash pump

1 work trailer

1 waste bin

4 Entact trucks

1 CS44B compactor

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT <u>Edmonds Terminal</u>	
PARK		CONTRACT NO.	DATE <u>09-23-2017</u>
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <u>Clear & Sunny</u>	TEMPERATURE	GROUND CONDITIONS <u>Dry</u> , Damp, Wet, Frozen, ("Circle")	
	High Low		

Personnel Onsite / Visitors (time)	Materials Imported/Exported
<u>Arcadis</u>	<ul style="list-style-type: none"> • Imported - 8126 1 load of 8126 Berm-fill, 11 loads of 8129 saturated zone fill, 11 EX loads of 8111 vadose zone fill • Exported - 11 loads of soil
<u>Entact</u>	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<u>1 SKid Steer</u>				
<u>1 large dozer</u>				
<u>1 323 excavator</u>				
<u>1 320D excavator</u>				
<u>1 335 generator</u>				
<u>3 generators</u>				
<u>2 mobile mini's</u>				
<u>1 wheel wash</u>				
<u>4 honey buckets / 2 hand washes</u>				
<u>TWTS</u>				
<u>2 diesel pumps</u>				
<u>1 trash pump</u>				
<u>1 work trailer</u>				
<u>1 waste bin</u>				
<u>4 Entact trucks</u>				
<u>1 CS44B compactor</u>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative

PROJECT *Edmonds Terminal*

PARK

CONTRACT NO.

DATE

09-25-2017

CONTRACTOR

CONTRACTOR REPRESENTATIVE ON JOB

WEATHER

partly cloudy

TEMPERATURE

High

Low

GROUND CONDITIONS (dry, Damp, Wet, Frozen, "Circle")

Personnel Onsite / Visitors (time)

Materials Imported/Exported

Arcadis

• Imported - CAT D6N Dozer

Entact

chevron HES

• Exported 28 loads of soil

clearcreek

EQUIPMENT ON JOB

Time

Truck Count

Import

Export

Work Completed (Samples Collected)

1 large dozer

1 skid steer

1 323 excavator

1 320D excavator

1 335 excavator

3 generators

2 mobile mini's

1 wheel wash

4 honey buckets / 2 hand washes

TWTS

2 diesel pumps

1 trash pump

1 work trailer

1 waste bin

4 Entact trucks

1 CS44B compactor

1 CAT D6N Dozer

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Edmonds Terminal	
PARK		CONTRACT NO.	DATE 09-26-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER clear & Sunny	TEMPERATURE		GROUND CONDITIONS (Dry , Damp, Wet, Frozen, "Circle")
	High	Low	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis - Scott	• Exported - 28 loads of soil
Entact	
Chevron HES & PM Kim	
Clearcreek	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 large dozer				
1 skid steer				
1 323 excavator				
1 320 D excavator				
1 335 excavator				
3 generators				
2 mobile mini's				
1 wheel wash				
4 honey buckets / 2 hand washes				
TWTS				
2 diesel pumps				
1 trash pump				
1 work trailer				
1 waste bin				
4 Entact trucks				
1 CS44B compactor				
1 CAT D6N DOZER				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT Edmonds Terminal	
PARK		CONTRACT NO.	DATE 09-27-2017
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER clear & Sunny	TEMPERATURE		GROUND CONDITIONS (D ry, Damp, Wet, Frozen, "Circle")
	High	Low	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis - Scott	• Imported - 8 loads of 811 vadose zone fill
Entact	
Chevron HES & PM Kim	• Exported - 25 loads of soil
Clearcreek	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 large dozer				
1 skid steer				
1 323 excavator				
1 ^{320b} / ₃₀ excavator				
1 335 excavator				
3 generators				
2 mobile mini's				
1 wheel wash				
4 honey buckets / 2 hand washes				
TWTS				
2 diesel pumps				
1 trash pump				
1 work trailer				
1 waste bin				
4 Entact trucks				
1 CS44B compactor				
1 CAT D6N DOZER				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT <u>Edmonds Terminal</u>	
PARK			CONTRACT NO.	DATE <u>09-28-2017</u>
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <u>clear & Sunny</u>	TEMPERATURE		GROUND CONDITIONS <u>Dry</u> , Damp, Wet, Frozen, ("Circle")	
	High	Low		
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
<u>Arcadis</u>			* Imported 7 loads of 8 III vadose fill * Exported 34 loads of soil	
<u>Entact</u>				
<u>Chevron HES</u>				
<u>clearcreek</u>				
EQUIPMENT ON JOB			Work Completed (Samples Collected)	
	Time	Truck Count		
		Import	Export	
<u>1 large dozer</u>				
<u>1 skid steer</u>				
<u>1 323 excavator</u>				
<u>1 320D excavator</u>				
<u>1 335 excavator</u>				
<u>3 generators</u>				
<u>2 mobile mini's</u>				
<u>1 wheel wash</u>				
<u>4 honey buckets / 2 hand washes</u>				
<u>TWTS</u>				
<u>2 diesel pumps</u>				
<u>1 trash pump</u>				
<u>1 work trailer</u>				
<u>1 waste bin</u>				
<u>4 Entact trucks</u>				
<u>1 CS44B compactor</u>				
<u>1 CAT D10N dozer</u>				

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative				PROJECT <u>Edmonds Terminal</u>	
PARK			CONTRACT NO.		DATE <u>9-29-2017</u>
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB		
WEATHER <u>Overcast</u>		TEMPERATURE High Low		GROUND CONDITIONS (<u>Dry</u> , Damp, Wet, Frozen, "Circle")	
Personnel Onsite / Visitors (time)			Materials Imported/Exported		
<u>Aircadis</u>			<u>Imported 5 loads of fill vadose fill</u>		
<u>Entact</u>					
<u>Chevron HES</u>			<u>Exported 29 loads of soil</u>		
<u>Clearcreek</u>					
EQUIPMENT ON JOB		Truck Count		Work Completed (Samples Collected)	
	Time	Import	Export		
<u>1 large dozer</u>					
<u>1 skid steer</u>					
<u>1 323 excavator</u>					
<u>1 320D excavator</u>					
<u>1 335 excavator</u>					
<u>3 generators</u>					
<u>2 mobile mini's</u>					
<u>1 wheel wash</u>					
<u>4 honey buckets / 2 hand washes</u>					
<u>TWTS</u>					
<u>2 diesel pumps</u>					
<u>1 trash pump</u>					
<u>1 work trailer</u>					
<u>1 waste bine</u>					
<u>4 Entact trucks</u>					
<u>1 CS44B compactor</u>					
<u>1 CAT D6N dozer</u>					

CONTINUED ()

SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative				PROJECT <i>Edmonds Terminal</i>	
PARK			CONTRACT NO.		DATE <i>10-02-17</i>
CONTRACTOR			CONTRACTOR REPRESENTATIVE ON JOB		
WEATHER <i>Clear & Sunny</i>		TEMPERATURE High Low		GROUND CONDITIONS (<i>W</i> ry, Damp, Wet, Frozen, "Circle")	
Personnel Onsite / Visitors (time)			Materials Imported/Exported		
<i>Arcadis</i>			<i>Imported 12 loads of fill vadose fill</i>		
<i>Entact</i>					
<i>Chevron HES</i>			<i>Exported 37 loads of soil</i>		
<i>Clearcreek</i>					
EQUIPMENT ON JOB		Truck Count		Work Completed (Samples Collected)	
	Time	Import	Export		
<i>1 large dozer</i>					
<i>1 100 skid steer</i>					
<i>1 323 excavator</i>					
<i>1 3200 3200 excavator</i>					
<i>1 335 excavator</i>					
<i>3 generators</i>					
<i>2 mobile mini's</i>					
<i>1 wheel wash</i>					
<i>4 honey buckets / 2 hand washes</i>					
<i>TWTS</i>					
<i>2 diesel pumps</i>					
<i>1 trash pump</i>					
<i>1 work trailer</i>					
<i>1 waste bin</i>					
<i>4 Entact trucks</i>					
<i>1 CS44B compactor</i>					
<i>1 CAT D6N dozer</i>					

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SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

PROJECT Edmonds Terminal

Contracting Officer's Representative

PARK _____ CONTRACT NO. _____ DATE 10-03-17

CONTRACTOR _____ CONTRACTOR REPRESENTATIVE ON JOB _____

WEATHER clear & sunny TEMPERATURE _____ GROUND CONDITIONS Dry, Damp, Wet, Frozen, "Circle"
 High _____ Low _____

Personnel Onsite / Visitors (time)	Materials Imported/Exported
<u>Arcadis</u>	<u>imported 19 loads of fill vadose fill</u>
<u>Entact</u>	
<u>Chevron HES</u>	<u>Exported 28 loads of soil</u>
<u>Clearcreek</u>	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<u>1 large dozer</u>				
<u>1 skid steer</u>				
<u>1 323 excavator</u>				
<u>1 320D excavator</u>				
<u>1 335 excavator</u>				
<u>3 generators</u>				
<u>2 mobile mini's</u>				
<u>1 wheel wash</u>				
<u>4 honey buckets / 2 hand washes</u>				
<u>TWTS</u>				
<u>2 diesel pumps</u>				
<u>1 trash pump</u>				
<u>1 work trailer</u>				
<u>1 waste bin</u>				
<u>4 Entact trucks</u>				
<u>1 CS44B compactor</u>				
<u>1 CAT D6N dozer</u>				

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SIGNATURE _____ TITLE PROJECT SUPERVISOR/COR _____

DAILY LOG OF CONSTRUCTION

PROJECT Edmonds Terminal

Contracting Officer's Representative

PARK		CONTRACT NO.	DATE 10-04-17
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER clear & sunny	TEMPERATURE High Low		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")

Personnel Onsite / Visitors (time)	Materials Imported/Exported
Arcadis	Imported - 304 ^E excavator, 6 loads of
Entact	8111 vadose fill, & 15 loads of 8129
Chevron HES	Saturated fill
Clearcreek	Exported - CAT 320D excavator, jersey
	barriers, & 15 loads of soil

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
1 large dozer				
1 skid steer				
1 323 excavator				
1 335 excavator				
3 generators				
2 mobile mini's				
1 wheel wash				
4 honey buckets / 2 hand washes				
TWTS				
2 diesel pumps				
1 trash pump				
1 work trailer				
1 waste bin				
4 Entact trucks				
1 CS44B compactor				
1 CAT D6N dozer				
1 304E excavator				

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SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative			PROJECT Edmonds Terminal	
PARK			CONTRACT NO.	
CONTRACTOR			DATE 10-05-17	
CONTRACTOR REPRESENTATIVE ON JOB				
WEATHER clear & Sunny		TEMPERATURE		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")
		High	Low	
Personnel Onsite / Visitors (time)			Materials Imported/Exported	
Arcadis			* Imported - 21 loads of 8129 saturated	
Entact			Zone fill	
Chevron HES				
Clearcreek			* Exported - 1 diesel pump, 323 excavator,	
			10 loads of soil	
EQUIPMENT ON JOB		Truck Count		Work Completed (Samples Collected)
	Time	Import	Export	
1 large dozer				
1 skid steer				
1 335 excavator				
1 304E excavator				
3 generators				
2 mobile minis				
1 wheel wash				
4 honey buckets / 2 hand washes				
TWTS				
1 diesel pump				
1 trash pump				
1 work trailer				
1 waste bin				
4 Entact trucks				
1 CS44B compactor				
1 D16N DOZER				

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SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT <i>Edmonds Terminal</i>	
PARK		CONTRACT NO.	DATE <i>10-06-2017</i>
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>Partly cloudy & Sunny</i>		GROUND CONDITIONS (Dry, Damp, Wet, Frozen, "Circle")	
		TEMPERATURE	
		High	Low

Personnel Onsite / Visitors (time)	Materials Imported/Exported
<i>Arcadis</i>	<i>• Imported - 12 loads of saturated Zone fill (8129)</i>
<i>Entact</i>	
<i>Clearcreek</i>	
	<i>• Exported - 4 loads of soil, crane mats</i>

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<i>1 large dozer</i>				
<i>1 skid steer</i>				
<i>1 335 excavator</i>				
<i>3 generators</i>				
<i>2 mobile minis</i>				
<i>1 wheel wash</i>				
<i>7 honey buckets / 2 hand washes</i>				
<i>TWTS</i>				
<i>1 diesel pump</i>				
<i>1 trash pump</i>				
<i>1 work trailer</i>				
<i>1 waste bin</i>				
<i>4 Entact trucks</i>				
<i>1 CS44B compactor</i>				
<i>1 D6N Dozer</i>				

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SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT <i>Edmonds Terminal</i>	
PARK		CONTRACT NO.	DATE <i>10-09-77</i>
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>clear & sunny</i>	TEMPERATURE		GROUND CONDITIONS (<u>Dry</u> , Damp, Wet, Frozen, "Circle")
	High	Low	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
<i>Arcadis</i>	<ul style="list-style-type: none"> • Imported - 15 loads of 8/29 saturated zone fill, 17 loads of 8/11 vadose zone fill, sewer drainage pipes • No export
<i>Entact</i>	
<i>Clearcreek</i>	
<i>Cascade Drilling</i>	
<i>OTAK surveys</i>	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<i>1 large dozer</i>				
<i>1 skid steer</i>				
<i>1 335 excavator</i>				
<i>1 304E excavator</i>				
<i>3 generators</i>				
<i>2 mobile mini's</i>				
<i>1 wheel wash</i>				
<i>1 honey buckets/2 hand washes</i>				
<i>TWTS</i>				
<i>1 diesel pump</i>				
<i>1 trash pump</i>				
<i>1 work trailer</i>				
<i>1 waste bin</i>				
<i>4 Entact trucks</i>				
<i>1 CS44B compactor</i>				
<i>D6N dozer</i>				

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SIGNATURE

TITLE PROJECT SUPERVISOR/COR

DAILY LOG OF CONSTRUCTION

Contracting Officer's Representative		PROJECT	<i>Edmonds Terminal</i>
PARK		CONTRACT NO.	DATE <i>10/10/17</i>
CONTRACTOR		CONTRACTOR REPRESENTATIVE ON JOB	
WEATHER <i>overcast</i>	TEMPERATURE		GROUND CONDITIONS (<u>Dry</u> , Damp, Wet, Frozen, "Circle")
	High	Low	

Personnel Onsite / Visitors (time)	Materials Imported/Exported
<i>Arcadis</i>	• Imported - 18 loads of 8111 vadose zone fill
<i>Entact</i>	
<i>Clear creek</i>	
<i>Cascade Drilling</i>	• Exported - 304 excavator, 1 generator, and wheel wash
<i>Marvac</i>	

EQUIPMENT ON JOB	Time	Truck Count		Work Completed (Samples Collected)
		Import	Export	
<i>1 large dozer</i>				
<i>1 skid steer</i>				
<i>1 335 excavator</i>				
<i>2 generators</i>				
<i>2 mobile minis</i>				
<i>4 honey buckets</i>				
<i>2 hand washes</i>				
<i>TWTS</i>				
<i>1 diesel pump</i>				
<i>1 trash pump</i>				
<i>1 work trailer</i>				
<i>1 waste bin</i>				
<i>4 Entact trucks</i>				
<i>1 CS44B compactor</i>				
<i>1 D6N dozer</i>				

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SIGNATURE

TITLE PROJECT SUPERVISOR/COR

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 8-1-2017	Monitoring Personnel: Eric Krueger / Ryan Brauchle	Monitoring Station ID: Edmonds Terminal
Weather: Sunny, 80°F	ARCADIS Site H&S Supervisor: Ryan Brauchle	Excavation Summary: Excavation not started - first of six baseline measurements - 08/01 @ ~1200
Shift: <u>DAY</u> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas		Type:	Ashtead	Ashtead	
Brand:	Rae	Rae		Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae		By:	Ryan Eric Krueger	Eric Krueger	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1126	0.0	0	20.9	0	0			
AM-2	1127	0.0	0	20.9	0	0			
AM-3	1128	0.0	0	20.9	0	0			
AM-4	1129	0.0	0	20.9	0	0			
AM-5	1131	0.0	0	20.9	0	0			
AM-6	1132	0.0	0	20.9	0	0			
AM-7	1133	0.0	0	20.9	0	0			
AM-8	1142	0.0	0	20.9	0	0			
AM-9	1144	0.0	0	20.9	0	0			
AM-10	1145	0.0	0	20.9	0	0			
EXCAVATION	1130	0.0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 08-01-2017	Monitoring Personnel: Eric Krueger / Ryan Brauchle	Monitoring Station ID: Edmonds Terminal
Weather: Sunny, 85°F	ARCADIS Site H&S Supervisor: Ryan Brauchle	Excavation Summary: Excavation not started - second of six baseline measurements - 08/01 @ ~1600
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas		Type:	Ashtead	Ashtead	
Brand:	Rae	Rae		Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae		By:	Eric Krueger	Eric Krueger	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1540	0.0	0	20.9	0	0			
AM-2	1540	0.0	0	20.9	0	0			
AM-3	1541	0.0	0	20.9	0	0			
AM-4	1542	0.0	0	20.9	0	0			
AM-5	1543	0.0	0	20.9	0	0			
AM-6	1544	0.0	0	20.9	0	0			
AM-7	1545	0.0	0	20.9	0	0			
AM-8	1552	0.0	0	20.9	0	0			
AM-9	1551	0.0	0	20.9	0	0			
AM-10	1549	0.0	0	20.9	0	0			
EXCAVATION	1542	0.0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 08-02-2017	Monitoring Personnel: Ryan Brauchla Eric Krueger	Monitoring Station ID: Edmonds Terminal
Weather: Sunny	ARCADIS Site H&S Supervisor: Ryan Brauchla	Excavation Summary: Excavation not started This is the third of six baseline monitoring measurements 08/02 @ ~1200
Shift: DAY NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas		Type:	Ashtead	Ashtead	
Brand:	Rae	Rae		Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae		By:	Eric Krueger	Eric Krueger	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1140 1141	0.0	0	20.9	0	0			
AM-2	1141 1142	0.0	0	20.9	0	0			
AM-3	1143	0.0	0	20.9	0	0			
AM-4	1144	0.0	0	20.9	0	0			
AM-5	1145	0.0	0	20.9	0	0			
AM-6	1146	0.0	0	20.9	0	0			
AM-7	1148	0.0	0	20.9	0	0			
AM-8	1155	0.0	0	20.9	0	0			
AM-9	1152	0.0	0	20.9	0	0			
AM-10	1150	0.0	0	20.9	0	0			
EXCAVATION	1145	0.0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 08-02-2017	Monitoring Personnel: Ryan Brauchla, Eric Krueger	Monitoring Station ID: Edmonds Terminal
Weather: Sunny	ARCADIS Site H&S Supervisor: Ryan Brauchla	Excavation Summary: Excavation not started This is the fourth of six baseline monitoring measurements 08/02 @ ~1600
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas		Type:	Ashtead	Ashtead	
Brand:	Rae	Rae		Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae		By:	Eric Krueger	Eric Krueger	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1534	0.0	0	20.9	0	0			
AM-2	1535	0.0	0	20.9	0	0			
AM-3	1536	0.0	0	20.9	0	0			
AM-4	1537	0.0	0	20.9	0	0			
AM-5	1538	0.0	0	20.9	0	0			
AM-6	1539	0.0	0	20.9	0	0			
AM-7	1541	0.0	0	20.9	0	0			
AM-8	1545 1550	0.0	0	20.9	0	0			
AM-9	1548	0.0	0	20.9	0	0			
AM-10	1545	0.0	0	20.9	0	0			
EXCAVATION	1542	0.0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 08-03-2017	Monitoring Personnel: Eric Krueger, Ryan Brauchle	Monitoring Station ID: Edmonds Terminal
Weather: sunny, smoke	ARCADIS Site H&S Supervisor: Ryan Brauchle	Excavation Summary: Excavation not started Fifth of six baseline measurements 08/03 @ ~1200
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas		Type:	Ashtead	Ashtead	
Brand:	Rae	Rae		Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae		By:	Eric Krueger	Eric Krueger	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1203	0.0	0	20.9	0	0			
AM-2	1204	0.0	0	20.9	0	0			
AM-3	1205	0.0	0	20.9	0	0			
AM-4	1206	0.0	0	20.9	0	0			
AM-5	1208	0.0	0	20.9	0	0			
AM-6	1209	0.0	0	20.9	0	0			
AM-7	1210	0.0	0	20.9	0	0			
AM-8	1200	0.0	0	20.9	0	0			
AM-9	1201	0.0	0	20.9	0	0			
AM-10	1202	0.0	0	20.9	0	0			
EXCAVATION	1207	0.0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 08-03-2017	Monitoring Personnel: Eric Krueger, Ryan Brauchlg	Monitoring Station ID: Edmonds Terminal
Weather: sunny, smoke	ARCADIS Site H&S Supervisor: Ryan Brauchlg	Excavation Summary: Excavation not started Sixth of six baseline measurements 08/03 @ ~1600
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas		Type:	Ashtead	Ashtead	
Brand:	Rae	Rae		Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae		By:	Eric Krueger	Eric Krueger	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1600	0.0	0	20.9	0	0			
AM-2	1601	0.0	0	20.9	0	0			
AM-3	1602	0.0	0	20.9	0	0			
AM-4	1603	0.0	0	20.9	0	0			
AM-5	1604	0.0	0	20.9	0	0			
AM-6	1606	0.0	0	20.9	0	0			
AM-7	1608	0.0	0	20.9	0	0			
AM-8	1609	0.0	0	20.9	0	0			
AM-9	1611	0.0	0	20.9	0	0			
AM-10	1612	0.0	0	20.9	0	0			
EXCAVATION	1607 1607	0.0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

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Date: 08-28-2017	Monitoring Personnel: Ryan Brauchle	Monitoring Station ID: Former Unocal Edmonds Terminal
Weather: clear & calm	ARCADIS Site H&S Supervisor: Ryan Brauchle	Excavation Summary: Begin breaking ground today - will perform air monitoring for CO/LEL/VOCs/H ₂ S/O ₂ every hour until end of work. Did not break ground today - monitoring discontinued.
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5-Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	Calibrated by
Model:	Multi Rae	Q Rae	Multi RAE Plus	By:	Ryan Brauchle	Ryan Brauchle	RBC@1200

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1221	0.0	0	20.9	0	0	-	-	
AM-2	1220	0.0	0	20.9	0	0	-	-	
AM-3	1219	0.0	0	20.9	0	0	-	-	
AM-4	1218	0.0	0	20.9	0	0	-	-	
AM-5	1217	0.0	0	20.9	0	0	-	-	
AM-6	1216	0.0	0	20.9	0	0	-	-	
AM-7	1215	0.0	0	20.9	0	0	-	-	
AM-8	1224	0.0	0	20.9	0	0	-	-	
AM-9	1223	0.0	0	20.9	0	0	-	-	
AM-10	1222	0.0	0	20.9	0	0	-	-	
Excavation	1218	0.0	0	20.9	0	0	-	-	No excavation yet

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Monitoring Station ID: Former Unocal Edmonds Terminal

Date: 08-29-2017	Monitoring Personnel: Ryan Brauchla	Excavation Summary: <i>Excavation is very small at this point - no need to collect from north, south, east, & west corners. Entact breaks ground @ in berm between and Hourly monitoring follows. Excavation not started</i>
Weather: <i>clear with smoke</i>	ARCADIS Site H&S Supervisor: Ryan Brauchla	
Shift: DAY NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data		
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas
Model:	Multi Rae	Q Rae	Multi Rae PLUS	By:	RB@ 0920	RB@ 0922

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0942	0.0	0	20.9	0	0	-	-	Same readings at
AM-2	0943	0.0	0	20.9	0	0	-	-	Same readings at
AM-3	0944	0.0	0	20.9	0	0	-	-	Same readings at
AM-4	0947	0.0	0	20.9	0	0	-	-	Same readings at
AM-5	0952	0.0	0	20.9	0	0	-	-	Same readings at
AM-6	0953	0.0	0	20.9	0	0	-	-	Same readings at
AM-7	0954	0.0	0	20.9	0	0	-	-	Same readings at
AM-8	0933	0.0	0	20.9	0	0	-	-	Same readings at
AM-9	0940	0.0	0	20.9	0	0	-	-	Same readings at
AM-10	0941	0.0	0	20.9	0	0	-	-	Same readings at
Excavation	0948	0.0	0	20.9	0	0	-	-	Same readings at

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 1 of 1

Date: <i>8/30/17</i>	Monitoring Personnel: <i>A. Pink & R. Brauchla</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>cloudy</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for peeling back DB-2 liner</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	<i>calibrated by</i>
Brand:	Rae	Rae	<i>Rae</i>	Gas:	Isobutylene 100 ppm	Multi gas	<i>Alex Pink @ 1000</i>
Model:	Multi Rae	Q Rae	<i>Multi Rae Plus</i>	By:	<i>Alex Pink</i>	<i>Alex P-mk</i>	<i>with cal gas isobutylene</i>

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1426	0.0	0	20.9	0	0	—	—	<i>same readings at 1521/1631</i>
AM-2	1426	0.0	0	20.9	0	0	—	—	<i>same readings at 1522/1632</i>
AM-3	1427	0.0	0	20.9	0	0	—	—	<i>same readings at 1523/1632</i>
AM-4	1437	0.0	0	20.9	0	0	—	—	<i>same readings at 1527/1636</i>
AM-5	1436	0.0	0	20.9	0	0	—	—	<i>same readings at 1528/1637</i>
AM-6	1435	0.0	0	20.9	0	0	—	—	<i>same readings at 1528/1638</i>
AM-7	1435	0.0	0	20.9	0	0	—	—	<i>same readings at 1529/1639</i>
AM-8	1424	0.0	0	20.9	0	0	—	—	<i>same readings at 1520/1629</i>
AM-9	1425	0.0	0	20.9	0	0	—	—	<i>same readings at 1520/1630</i>
AM-10	1425	0.0	0	20.9	0	0	—	—	<i>same readings at 1521/1630</i>
Excavation	1435	0.0	0	20.9	0	0	—	—	<i>same readings at 1528/1637</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>8/31/17</i>	Monitoring Personnel: <i>A. Pink</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>AM cloudy, calm</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for berm excavation</i>
Shift: <u>DAY</u> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	Calibrated by
Brand:	Rae	Rae	<i>Rae</i>	Gas:	Isobutylene 100 ppm	Multi gas	<i>AP @ 0900</i>
Model:	Multi Rae	Q Rae	<i>MultiRae Plus</i>	By:	<i>AP</i>	<i>AP</i>	<i>with cal gas isobutylene</i>

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0934	0.0	0	20.9	0	0	-	-	same readings at 1022/1153/1311/1413/1505/1618
AM-2	0935	0.0	0	20.9	0	0	-	-	same readings at 1023/1154/1312/1414/1506/1618
AM-3	0935	0.0	0	20.9	0	0	-	-	same readings at 1023/1155/1313/1415/1507/1619
AM-4	0936	0.0	0	20.9	0	0	-	-	same readings at 1024/1156/1315/1416/1508/1620
AM-5	0936	0.0	0	20.9	0	0	-	-	same readings at 1025/1157/1316/1417/1509/1621
AM-6	0937	0.0	0	20.9	0	0	-	-	same readings at 1028/1158/1317/1418/1510/1622
AM-7	0938	0.0	0	20.9	0	0	-	-	same readings at 1029/1159/1319/1419/1511/1623
AM-8	0930	0.0	0	20.9	0	0	-	-	same readings at 1021/1150/1308/1410/1502/1615
AM-9	0930	0.0	0	20.9	0	0	-	-	same readings at 1021/1152/1309/1411/1503/1616
AM-10	0934	0.0	0	20.9	0	0	-	-	same readings at 1022/1152/1310/1412/1504/1617
Excavation	0936	0.0	0	20.9	0	0	-	-	same readings at 1025/1156/1314/1416/1508

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>9/1/17</i>	Monitoring Personnel: <i>A. Pink</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>Sunny, calm</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for excavation of NW corner</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	<i>calibrated by</i>
Model:	Multi Rae	Q Rae	Multi Rae Plus	By:	<i>A. Pink</i>	<i>A. Pink</i>	<i>A. Pink @ 0730</i>
							<i>w/ cal gas + isobutylene</i>

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0824	0.0	0	20.9	0	0	—	—	<i>same readings @ 1007/1107/1204/1325</i>
AM-2	0825	0.0	0	20.9	0	0	—	—	
AM-3	0826	0.0	0	20.9	0	0	—	—	
AM-4	0827	0.0	0	20.9	0	0	—	—	
AM-5	0828	0.0	0	20.9	0	0	—	—	
AM-6	0829	0.0	0	20.9	0	0	—	—	
AM-7	0830	0.0	0	20.9	0	0	—	—	
AM-8	0821	0.0	0	20.9	0	0	—	—	
AM-9	0822	0.0	0	20.9	0	0	—	—	
AM-10	0823	0.0	0	20.9	0	0	—	—	
Excavation	0827	0.0	0	20.9	0	0	—	—	<i>same readings @ 1006/1106/1203/1324</i>
									<i>same readings @ 1010/1110/1206/1328</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 09-07-2017	Monitoring Personnel: Ryan Brauchla	Monitoring Station ID: Former Unocal Edmonds Terminal
Weather: smoke	ARCADIS Site H&S Supervisor: Ryan Brauchla	Excavation Summary: Current extent of excavation - A-line from A3-A6 excavated to depth (excluding northeast sidewalk)
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae Plus	By:	RB @ 0730	RB @ 0730	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0821	0.0	0	20.9	0	0	-	-	Same readings @: 1000, 1135, 1323, 1535
AM-2	0822	0.0	0	20.9	0	0	-	-	Same readings @: 1001, 1136, 1324, 1536
AM-3	0823	0.0	0	20.9	0	0	-	-	Same readings @: 1002, 1137, 1325, 1537
AM-4	0824	0.0	0	20.9	0	0	-	-	Same readings @: 1003, 1138, 1326, 1538
AM-5	0825	0.0	0	20.9	0	0	-	-	Same readings @: 1005, 1141, 1338, 1540
AM-6	0831	0.0	0	20.9	0	0	-	-	Same readings @: 1006, 1142, 1335, 1541
AM-7	0832	0.0	0	20.9	0	0	-	-	Same readings @: 1007, 1143, 1336, 1542
AM-8	0818	0.0	0	20.9	0	0	-	-	Same readings @: 0955, 1130, 1320, 1530
AM-9	0819	0.0	0	20.9	0	0	-	-	Same readings @: 0956, 1131, 1321, 1531
AM-10	0820	0.0	0	20.9	0	0	-	-	Same readings @: 0957, 1132, 1322, 1532

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AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 09-07-2017		Monitoring Personnel: Ryan Brauchler			Monitoring Station ID: Former Edmonds Unocal Terminal				
Weather: smoke		ARCADIS Site H&S Supervisor: Ryan Brauchler		Excavation Summary: See page 1					
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT		ARCADIS Project Manager: Scott Zorn							
Monitoring Equipment				Calibration Data					
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead			
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas			
Model:	Multi Rae	Q Rae	Multi Rae PLUS	By:	RB00730	RB00730			
Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-N	0825	0.0	0	20.9	0	0	-	-	Same readings @: 1010, 1145, 1339, 1545
EX-W	0825	0.0	0	20.9	0	0	-	-	Same readings @: 1011, 1146, 1340, 1546
EX-S	0828	0.0	0	20.9	0	0	-	-	Same readings @: 1012, 1147, 1342, 1547
EX-E	0828	0.0	0	20.9	0	0	-	-	Same readings @: 1013, 1148, 1343, 1548

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9-6-2017		Monitoring Personnel: R. Brauchla				Monitoring Station ID: Former unocal Edmonds Terminal				
Weather: smoke		ARCADIS Site H&S Supervisor: R. Brauchla			Excavation Summary: Excavation is open at the northern corner of the exclusion zone near AM-4. Excavation is being extended to the southeast along the line of the berm between DB-1 & DB-2					
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT		ARCADIS Project Manager: Scott Zorn								
Monitoring Equipment							Calibration Data			
Type:	PID	4 Gas		5 Gas		Type:	Ashtead		Ashtead	
Brand:	Rae	Rae		Rae		Gas:	Isobutylene 100 ppm		Multi gas	
Model:	Multi Rae	Q Rae		Multi Rae PLUS		By:	RBC@ 0745		RBC@ 0745	
Location	Meter Readings						Color Tubes		Comments	
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S		
AM-1	0833	0.0	0	20.9	0	0	-	-	Same readings at 1003, 1139, 1304, 1435, 1545, 1645 Same readings at 1004, 1140, 1305, 1436, 1546, 1646 Same readings at 1005, 1141, 1306, 1437, 1547, 1647 Same readings at 1007, 1143, 1308, 1439, 1549, 1649 Same readings at 1010, 1147, 1311, 1441, 1551, 1651 Same readings at 1015, 1152, 1314, 1445, 1555, 1655 Same readings at 1016, 1153, 1315, 1446, 1556, 1656 Same readings at 1000, 1136, 1301, 1430, 1540, 1640 Same readings at 1001, 1137, 1302, 1431, 1541, 1641 Same readings at 1002, 1138, 1303, 1432, 1542, 1642	
AM-2	0834	0.0	0	20.9	0	0	-	-		
AM-3	0835	0.0	0	20.9	0	0	-	-		
AM-4	0840	0.0	0	20.9	0	0	-	-		
AM-5	0850	0.0	0	20.9	0	0	-	-		
AM-6	0851	0.0	0	20.9	0	0	-	-		
AM-7	0852	0.0	0	20.9	0	0	-	-		
AM-8	0830	0.0	0	20.9	0	0	-	-		
AM-9	0831	0.0	0	20.9	0	0	-	-		
AM-10	0832	0.0	0	20.9	0	0	-	-		

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>9-6-2017</i>	Monitoring Personnel: <i>R. Bravchla</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>smoke</i>	ARCADIS Site H&S Supervisor: <i>R. Bravchla</i>	Excavation Summary: <i>see page 1</i>
Shift: <u>DAY</u> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	<i>5 Gas</i>	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	<i>Rae</i>	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	<i>Multi Rae PLUS</i>	By:	<i>RBC 0745</i>	<i>RBC 0745</i>	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
<i>EX-N</i>	<i>0842</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>Same readings at 1008, 1144, 1309, 1440, 1550, 1650</i>
<i>EX-E</i>	<i>0846</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>Same readings at 1014, 1144, 1312, 1442, 1552, 1652</i>
<i>EX-S</i>	<i>0845</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>Same readings at 1013, 1150, 1313, 1443, 1553, 1653</i>
<i>EX-W</i>	<i>0843</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>Same readings at 1009, 1145, 1310, 1444, 1554, 1654</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 1 of 2

Date: <i>9/8/12</i>	Monitoring Personnel: <i>Alex Pink</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>smoke</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchle</i>	Excavation Summary: <i>Air monitoring for DB-2 excavation - excavating in NW corner of DB-2</i>
Shift: <u>(DAY)</u> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	<i>5 gas</i>	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	<i>Rae</i>	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	<i>Multi Rae Plus</i>	By:	<i>AP @ 0835</i>	<i>AP @ 0835</i>	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0859	0.0	0	20.9	0	0	-	-	<i>same readings @ 1119, 1223, 1337, 1451, 1554</i>
AM-2	0900	0.0	0	20.9	0	0	-	-	<i>same readings @ 1120, 1224, 1338, 1452, 1555</i>
AM-3	0901	0.0	0	20.9	0	0	-	-	<i>same readings @ 1121, 1225, 1339, 1453, 1556</i>
AM-4	0902	0.0	0	20.9	0	0	-	-	<i>same readings @ 1126, 1229, 1344, 1456, 1559</i>
AM-5	0907	0.0	0	20.9	0	0	-	-	<i>same readings @ 1128, 1230, 1345, 1457, 1601</i>
AM-6	0908	0.0	0	20.9	0	0	-	-	<i>same readings @ 1129, 1231, 1346, 1457, 1602</i>
AM-7	0910	0.0	0	20.9	0	0	-	-	<i>same readings @ 1130, 1232, 1347, 1458, 1603</i>
AM-8	0856	0.0	0	20.9	0	0	-	-	<i>same readings @ 1116, 1220, 1334, 1448, 1551</i>
AM-9	0857	0.0	0	20.9	0	0	-	-	<i>same readings @ 1117, 1221, 1335, 1449, 1552</i>
AM-10	0858	0.0	0	20.9	0	0	-	-	<i>same readings @ 1118, 1222, 1336, 1450, 1553</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>9/8/17</i>	Monitoring Personnel: <i>Alex Pink</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>overcast - smoke</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>Air monitoring for DB-2 excavation - excavating in DB-2 NW corner</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	<i>Rae</i>	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	<i>Multi Rae Plus</i>	By:	<i>AP @ 0835</i>	<i>AP @ 0835</i>	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
<i>EX-N</i>	<i>0904</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same readings @ 1123, 1226, 1340, 1454, 1557</i>
<i>EX-E</i>	<i>0906</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same readings @ 1125, 1228, 1343, 1456, 1558</i>
<i>EX-S</i>	<i>0902</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same readings @ 1124, 1227, 1342, 1455, 1558</i>
<i>EX-W</i>	<i>0903</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same readings @ 1124, 1227, 1341, 1454, 1557</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 1 of 2

Date: <i>9/11/17</i>	Monitoring Personnel: <i>A. Pink & J. Latham</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>Sunny</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for DB-2 excavation -excavating in NW corner</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	AP @ 0800	AP @ 0800	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0831	0.0	0	20.9	0	0	-	-	same readings @ 0931, 1043, 1200, 1344, 1447, 1544
AM-2	0832	0.0	0	20.9	0	0	-	-	same readings @ 0935, 1044, 1201, 1345, 1448, 1545
AM-3	0833	0.0	0	20.9	0	0	-	-	same readings @ 0938, 1045, 1202, 1346, 1449, 1546
AM-4	0838	0.0	0	20.9	0	0	-	-	same readings @ 0941, 1050, 1207, unable to sample due to excavation
AM-5	0839	0.0	0	20.9	0	0	-	-	same readings @ 0941, 1051, 1208, 1350, 1453, 1550
AM-6	0840	0.0	0	20.9	0	0	-	-	same readings @ 0943, 1052, 1209, 1351, 1454, 1551
AM-7	0841	0.0	0	20.9	0	0	-	-	same readings @ 0944, 1053, 1210, 1352, 1455, 1552
AM-8	0838	0.0	0	20.9	0	0	-	-	same readings @ 0931, 1040, 1156, 1341, 1444, 1544
AM-9	0839	0.0	0	20.9	0	0	-	-	same readings @ 0932, 1041, 1157, 1342, 1445, 1542
AM-10	0830	0.0	0	20.9	0	0	-	-	same readings @ 0933, 1042, 1158, 1343, 1446, 1543

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 2 of 2

Date: <i>9/10/17</i>	Monitoring Personnel: <i>A. Pink & J. Latham</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>Sunny</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for DB-2 excavation - excavating in NW corner</i>
Shift: DAY NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	AP @ 0800	AP @ 0800	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-N	0834	0.0	0	20.9	0	0	-	-	same readings @ 0837, 1046, 1203, ^{unable to sample} due to excavation expansion
EX-S	0836	0.0	0	20.9	0	0	-	-	same readings @ 0939, 1048, 1205, 1348, 1451, 1548
EX-E	0837	0.0	0	20.9	0	0	-	-	same readings @ 0940, 1049, 1206, 1349, 1452, 1549
EX-W	0835	0.0	0	20.9	0	0	-	-	same readings @ 0938, 1047, 1204, 1347, 1450, 1547

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9/12/17	Monitoring Personnel: Jason Little	Monitoring Station ID: Former Unocal Edmonds Terminal
Weather: Overcast	ARCADIS Site H&S Supervisor: SAM Miles	Excavation Summary: Excavation of DB-2 (AM-4 inoperative)
Shift: DAY NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Multi Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Aus	By:	Jason Little	Jason Little	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1009	0	0	20.1	0	0			
AM-2	1012	0	0	20.9	0	0			
AM-3	1015	0	0	20.9	0	0			
AM-5	1028	0	0	20.9	0	0			
AM-6	1030	0	0	20.9	0	0			
AM-7	1031	0	0	20.9	0	0			
AM-8	1000	0	0	20.9	0	0			
AM-9	1009	0	0	20.9	0	0			
AM-10	1000	0	0	20.9	0	0			
W	1022	0	0	20.1	0	0			
S	1024	0	0	20.9	0	0			
E	1026	0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9/12/17	Monitoring Personnel: Joan Lima	Monitoring Station ID: Former Unocal Edmonds
Weather: Overcast	ARCADIS Site H&S Supervisor: SAM Miles	Excavation Summary: Excavation of DB-2
Shift: DAY NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	(go)	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Multi Rae Plus	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae		By:	Joan Lima	Joan Lima	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1137	0	0	20.9	0	0			
AM-2	1138	0	0	20.9	0	0			
AM-3	1139	0	0	20.9	0	0			
AM-5	1143	0	0	20.9	0	0			
AM-6	1146	0	0	20.9	0	0			
AM-7	1147	0	0	20.9	0	0			
AM-8	1132	0	0	20.9	0	0			
AM-9	1133	0	0	20.9	0	0			
AM-10	1135	0	0	20.9	0	0			
W	1140	0	0	20.9	0	0			
S	1142	0	0	20.9	0	0			
E	1144	0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 6/		Monitoring Personnel: Jason Little			Monitoring Station ID: Former unocal Edmonds terminal				
Weather: Sunny		ARCADIS Site H&S Supervisor: Sam Miles		Excavation Summary: Excavation of OB-2 + Impact/EXFO					
Shift: DAY NIGHT		ARCADIS Project Manager: Scott Zorn							
Monitoring Equipment				Calibration Data					
Type:	PID	4 Gas	5 gas	Type:	Ashtead	Ashtead			
Brand:	Rae	Rae	Multi-Rae	Gas:	Isobutylene 100 ppm	Multi gas			
Model:	Multi Rae	Q Rae	(W)	By:	JL	JL			
Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1310	0	0	20.9	0	0			AMW-4 inaccuracy
AM-2	1311	0	0	20.9	0	0			
AM-3	1312	0	0	20.9	0	0			
AM-5	1317	0	0	20.9	0	0			
AM-6	1320	0	0	20.9	0	0			
AM-7	1322	0	0	20.9	0	0			
AM-8	1307	0	0	20.9	0	0			
AM-9	1308	0	0	20.9	0	0			
AM-10	1309	0	0	20.9	0	0			
W	1315	0	0	20.9	0	0			
S	1316	0	0	20.9	0	0			
E	1319	0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 7/12		Monitoring Personnel: John Kelly			Monitoring Station ID: Former Unocal Edmonds Terminal				
Weather: Partly cloudy		ARCADIS Site H&S Supervisor: Sam Miller		Excavation Summary: Excavate / Import / Export					
Shift: DAY NIGHT		ARCADIS Project Manager: Scott Zorn							
Monitoring Equipment									
Type:	PID	4 Gas			Calibration Data				
Brand:	Rae	Rae	5 gas		Type:	Ashtead	Ashtead		
Model:	Multi Rae	Q Rae	Multi Rae		Gas:	Isobutylene 100 ppm	Multi gas		
			NLS		By:	JL	JL		
Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1423	0	0	20.9	0	0			
AM-2	1421	0	0	20.9	0	0			
AM-3	1424	0	0	20.9	0	0			
AM-5	1427	0	0	20.9	0	0			
AM-6	1429	0	0	20.9	0	0			
AM-7	1420	0	0	20.9	0	0			
AM-8	1421	0	0	20.9	0	0			
AM-9	1422	0	0	20.9	0	0			
AM-10	1423	0	0	20.9	0	0			
E	1424	0	0	20.9	0	0			
W	1426	0	0	20.9	0	0			
S	1426	0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9/12/17		Monitoring Personnel: Jara 12912			Monitoring Station ID: Former Unocal Edmonds Terminal				
Weather: Sun		ARCADIS Site H&S Supervisor: Sam Miller		Excavation Summary:					
Shift: DAY NIGHT		ARCADIS Project Manager: Scott Zorn							
Monitoring Equipment							Calibration Data		
Type:	PID	4 Gas		Saw			Type:	Ashtead	Ashtead
Brand:	Rae	Rae		Mari Red			Gas:	Isobutylene 100 ppm	Multi gas
Model:	Multi Rae	Q Rae		Saw			By:		
Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	1615	0	0	20.9	0	0			
AM-2	1616	0	0	20.9	0	0			
AM-3	1617	0	0	20.9	0	0			
AM-5	1621	0	0	20.9	0	0			
AM-6	1625	0	0	20.9	0	0			
AM-7	1625	0	0	20.9	0	0			
AM-8	1610	0	0	20.9	0	0			
AM-9	1612	0	0	20.9	0	0			
AM-10	1613	0	0	20.9	0	0			
E	1618	0	0	20.9	0	0			
S	1620								
W	1622	0	0	20.9	0	0			

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9-13-2017	Monitoring Personnel: Joe Latham	Monitoring Station ID: Former Unocal Edmonds Terminal
Weather: Sunny	ARCADIS Site H&S Supervisor: Ryan Brauchla	Excavation Summary: Air Monitoring for DB-2 Excavation. - Excavating in NW Corner
Shift: <u>DAY</u> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	JOE @ 0715	JOE @ 0715	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0803	0.0	0	20.9	0	0	-	-	Same Readings @ 0856, 1008, 1149, 1304, 1408, 1509, 1604, 1714
AM-2	0804	0.0	0	20.9	0	0	-	-	Same Readings @ 0857, 1009, 1150, 1305, 1408, 1510, 1605, 1715
AM-3	0805	0.0	0	20.9	0	0	-	-	Same Readings @ 0858, 1010, 1151, 1306, 1410, 1511, 1606, 1716
AM-4	0806	0.0	0	20.9	0	0	-	-	Same Readings @ 0903, 1015, 1156, 1311, 1415, 1516, 1611, 1721
AM-5	0807	0.0	0	20.9	0	0	-	-	Same Readings @ 0904, 1016, 1157, 1312, 1416, 1517, 1612, 1722
AM-6	0808	0.0	0	20.9	0	0	-	-	Same Readings @ 0905, 1017, 1158, 1313, 1418, 1519, 1614, 1724
AM-7	0809	0.0	0	20.9	0	0	-	-	Same Readings @ 0906, 1018, 1159, 1314, 1419, 1520, 1615, 1725
AM-8	0800	0.0	0	20.9	0	0	-	-	Same Readings @ 0852, 1005, 1145, 1300, 1405, 1505, 1600, 1710
AM-9	0801	0.0	0	20.9	0	0	-	-	Same Readings @ 0853, 1006, 1146, 1301, 1406, 1506, 1601, 1711
AM-10	0802	0.0	0	20.9	0	0	-	-	Same Readings @ 0854, 1007, 1147, 1302, 1407, 1508, 1603, 1713

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 2 of 2

Date: 9-13-2017	Monitoring Personnel: Joe Latham	Monitoring Station ID: Former Unocal Edmonds Terminal
Weather: Sunny	ARCADIS Site H&S Supervisor: Ryan Brauchla	Excavation Summary: Air Monitoring for DB-2 Excavation. - Excavating in NW corner
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	JOE@0715	JOE@0715	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-N	0805	0.0	0	20.9	0	0	—	—	Same readings @ 0859, 1011, 1152, 1307, 1411, 1512, 1607, 1717
EX-S	0805	0.0	0	20.9	0	0	—	—	Same readings @ 0900, 1013, 1154, 1309, 1413, 1514, 1609, 1719
EX-E	0806	0.0	0	20.9	0	0	—	—	Same readings @ 0901, 1014, 1155, 1310, 1414, 1515, 1610, 1720
EX-W	0806	0.0	0	20.9	0	0	—	—	Same readings @ 0902, 1012, 1153, 1308, 1412, 1513, 1608, 1718

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 1 of 2

Date: 9-14-2017		Monitoring Personnel: Joe Latham			Monitoring Station ID: Former Unocal Edmonds Terminal				
Weather: Sunny		ARCADIS Site H&S Supervisor: Ryan Brauchla		Excavation Summary: Air Monitoring for DB-2 excavation.					
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT		ARCADIS Project Manager: Scott Zorn							
Monitoring Equipment				Calibration Data					
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead			
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas			
Model:	Multi Rae	Q Rae	Multi. Rae +	By:	JOE @ 0650	JOE @ 0650			
Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0733	0.0	0	20.9	0	0	-	-	Same Readings @ 0833, 0933, 1033, 1133, 1234, 1333, 1434, 1534, 1634
AM-2	0735	0.0	0	20.9	0	0	-	-	Same Readings @ 0835, 0935, 1035, 1135, 1235, 1334, 1435, 1535, 1635
AM-3	0736	0.0	0	20.9	0	0	-	-	Same Readings @ 0836, 0936, 1036, 1136, 1236, 1335, 1436, 1536, 1636
AM-4	0737	0.0	0	20.9	0	0	-	-	Not Accessable
AM-5	0737	0.0	0	20.9	0	0	-	-	Same Readings @ 0837, 0937, 1037, 1137, 1234, 1338, 1437, 1537, 1637
AM-6	0738	0.0	0	20.9	0	0	-	-	Same Readings @ 0840, 0940, 1040, 1140, 1241, 1340, 1440, 1540, 1640
AM-7	0739	0.0	0	20.9	0	0	-	-	Same Readings @ 0841, 0941, 1041, 1141, 1242, 1341, 1441, 1541, 1641
AM-8	0730	0.0	0	20.9	0	0	-	-	Same Readings @ 0830, 0930, 1030, 1130, 1230, 1330, 1430, 1530, 1630
AM-9	0731	0.0	0	20.9	0	0	-	-	Same Readings @ 0831, 0931, 1031, 1131, 1231, 1331, 1431, 1531, 1631
AM-10	0732	0.0	0	20.9	0	0	-	-	Same Readings @ 0832, 0932, 1032, 1132, 1233, 1332, 1432, 1532, 1632

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9-14-2017	Monitoring Personnel: Joe Latham	Monitoring Station ID: Former Unocal Edmonds Terminal
Weather: Sunny	ARCADIS Site H&S Supervisor: Ryan Brauchler	Excavation Summary: Air Monitoring for DB-2 excavation.
Shift: (DAY) NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	JOE @ 0650	JOE @ 0650	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-N									Not accessible
EX-W									Not accessible
EX-S	0737								Same Readings @ 0837, 0937, 1037, 1137, 1237, 1336, 1437, 1537, 1637
EX-E	0737								Same Readings @ 0838, 0938, 1038, 1138, 1238, 1337, 1438, 1538, 1638

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 2 of 2

Date: <u>9/15/17</u>		Monitoring Personnel: <u>A. Pink</u>			Monitoring Station ID: <u>Former Unocal Edmonds Terminal</u>				
Weather: <u>Sunny, clear</u>		ARCADIS Site H&S Supervisor: <u>Rydm Brauchle</u>		Excavation Summary: <u>air monitoring for DB-d excavation, backfill, and loadout - excavating in NW corner</u>					
Shift: <u>(DAY)</u> NIGHT		ARCADIS Project Manager: <u>Scott Zorn</u>							
Monitoring Equipment				Calibration Data					
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead			
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas			
Model:	Multi Rae	Q Rae	Multi Rae +	By:	AP @ 0715	AP @ 0715			
Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-N	-								inaccessible due to excavation extent
EX-S	0752	0.0	0	20.9	0	0	-	-	same @ 0909, 1014, 1218, 1434
EX-E	0753	0.0	0	20.9	0	0	-	-	same @ 0910, 1015, 1219, 1435
EX-W	0751	0.0	0	20.9	0	0	-	-	same @ 0908, 1013, 1217, 1433

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>9/15/17</i>	Monitoring Personnel: <i>A. Pink</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>Sunny, clear</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for DB-2 excavation, backfill, and loadout - excavating in NW corner</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	AP @ 0715	AP @ 0715	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0748	0.0	0	20.9	0	0	-	-	same @ 0905, 1010, 1214, 1430
AM-2	0749	0.0	0	20.9	0	0	-	-	same @ 0906, 1011, 1215, 1431
AM-3	0750	0.0	0	20.0	0	0	-	-	same @ 0907, 1012, 1216, 1432
AM-4	—	0.0	0	20.9	0	0	-	-	inaccessible due to excavation ext
AM-5	0754	0.0	0	20.9	0	0	-	-	same @ 0911, 1016, 1220, 1436
AM-6	0755	0.0	0	20.9	0	0	-	-	same @ 0912, 1017, 1221, 1437
AM-7	0756	0.0	0	20.9	0	0	-	-	same @ 0913, 1018, 1222, 1438
AM-8	0745	0.0	0	20.9	0	0	-	-	same @ 0902, 1007, 1211, 1427
AM-9	0746	0.0	0	20.9	0	0	-	-	same @ 0903, 1008, 1212, 1428
AM-10	0747	0.0	0	20.9	0	0	-	-	same @ 0904, 1009, 1213, 1429

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 1 of 2

Date: <i>7/18/17</i>	Monitoring Personnel: <i>AP</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>overcast, rain</i>	ARCADIS Site H&S Supervisor: <i>Rycka Brauchler</i>	Excavation Summary: <i>air monitoring for DB-2 excavation. Excavating from NW corner</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	<i>5 Gas</i>	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	<i>Rae</i>	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	<i>Multi Rae +</i>	By:	<i>AP @ 0730</i>	<i>AP @ 0730</i>	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0831	0.0	0	20.9	0	0	-	-	<i>Same @ 1030, 1150, 1245, 1352, 1521, 1638</i>
AM-2	0832	0.0	0	20.9	0	0	-	-	<i>Same @ 1051, 1151, 1246, 1353, 1522, 1639</i>
AM-3	0833	0.0	0	20.9	0	0	-	-	<i>Same @ 1052, 1152, 1247, 1354, 1523, 1640</i>
AM-4									<i>inaccessible due to excavation extent</i>
AM-5	0837	0.0	0	20.9	0	0	-	-	<i>Same @ 1055, 1156, 1251, 1358, 1527, 1641</i>
AM-6	0838	0.0	0	20.9	0	0	-	-	<i>Same @ 1056, 1157, 1252, 1359, 1528, 1645</i>
AM-7	0839	0.0	0	20.9	0	0	-	-	<i>Same @ 1057, 1158, 1253, 1400, 1529, 1646</i>
AM-8	0828	0.0	0	20.9	0	0	-	-	<i>Same @ 1047, 1147, 1242, 1349, 1518, 1635</i>
AM-9	0829	0.0	0	20.9	0	0	-	-	<i>Same @ 1048, 1148, 1243, 1350, 1519, 1636</i>
AM-10	0830	0.0	0	20.9	0	0	-	-	<i>Same @ 1049, 1149, 1244, 1351, 1520, 1637</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <u>9/18/17</u>		Monitoring Personnel: <u>AP</u>			Monitoring Station ID: <u>Former Unocal Edmonds Terminal</u>				
Weather: <u>overcast rain</u>		ARCADIS Site H&S Supervisor: <u>Ryan Brauchala</u>			Excavation Summary: <u>air monitoring for DB-2 excavation. Excavating from NW corner</u>				
Shift: <u>DAY</u> NIGHT		ARCADIS Project Manager: <u>Scott Zorn</u>							
Monitoring Equipment							Calibration Data		
Type:	PID	4 Gas		5 Gas		Type:	Ashtead		
Brand:	Rae	Rae		Rae		Gas:	Isobutylene 100 ppm		
Model:	Multi Rae	Q Rae		Multi Rae +		By:	AP @ 0730		
Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-N									inaccessible due to excavation
EX-S	0835	0.0	0	20.9	0	0	-	-	same @ 1054, 1154, 1249, 1356, 1525, 1642
EX-E	0836	0.0	0	20.9	0	0	-	-	same @ 1059, 1155, 1250, 1352, 1526, 1643
EX-W	0834	0.0	0	20.9	0	0	-	-	same @ 1053, 1153, 1248, 1355, 1524, 1641

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9/19/17		Monitoring Personnel: AP			Monitoring Station ID: Former Unocal Edmonds Terminal				
Weather: scattered showers		ARCADIS Site H&S Supervisor: Ryan Brauchle		Excavation Summary: air monitoring for DB-2 excavation. Excavating in NW and NE corners.					
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT		ARCADIS Project Manager: Scott Zorn							
Monitoring Equipment							Calibration Data		
Type:	PID	4 Gas		5 Gas		Type:	Ashtead		
Brand:	Rae	Rae		Rae		Gas:	Isobutylene 100 ppm		
Model:	Multi Rae	Q Rae		Multi Rae 7		By:	@0745 by AP @0745 by AP		
Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0826	0.0	0	20.9	0	0	-	-	Same @ 0935, 1101, 1208, 1312, 1407, 1604
AM-2	0827	0.0	0	20.9	0	0	-	-	Same @ 0934, 1103, 1209, 1313, 1408, 1605
AM-3	0828	0.0	0	20.9	0	0	-	-	Same @ 0935, 1105, 1210, 1314, 1409, 1606
AM-4	0833	0.0	0	20.4	0	0	-	-	Same @ 0940, 1108, 1215, 1319, 1414, 1611
AM-5	0834	0.0	0	20.4	0	0	-	-	Same @ 0941, 1109, 1316, 1320, 1415, 1612
AM-6	0835	0.0	0	20.4	0	0	-	-	Same @ 0942, 1110, 1317, 1321, 1416, 1613
AM-7	0836	0.0	0	20.4	0	0	-	-	Same @ 0943, 1111, 1318, 1322, 1417, 1614
AM-8	0823	0.0	0	20.0	0	0	-	-	Same @ 0930, 1058, 1205, 1309, 1404, 1601
AM-9	0824	0.0	0	20.9	0	0	-	-	Same @ 0931, 1059, 1206, 1310, 1405, 1602
AM-10	0825	0.0	0	20.9	0	0	-	-	Same @ 0932, 1100, 1207, 1311, 1406, 1603

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9/19/17		Monitoring Personnel: AP			Monitoring Station ID: Former Unocal Edmonds Terminal				
Weather: scattered showers		ARCADIS Site H&S Supervisor: Ryan Branciflora		Excavation Summary: air monitoring for DB - excavation. Excavating in NW and NE corners					
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT		ARCADIS Project Manager: Scott Zorn							
Monitoring Equipment							Calibration Data		
Type:	PID	4 Gas		5 Gas		Type:	Ashtead		
Brand:	Rae	Rae		Rae		Gas:	Isobutylene 100 ppm		
Model:	Multi Rae	Q Rae		Multi Rae +		By:	@ 0745 by AP		
Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-N	0832	0.0	20.9	20.9	0	0	-	-	Sample @ 0939, 1107, 1214, 1318, 1413, 1610
EX-S	0830	0.0	0	20.9	0	0	-	-	Sample @ 0937, 1105, 1212, 1316, 1411, 1608
EX-E	0831	0.0	0	20.9	0	0	-	-	Sample @ 0938, 1106, 1213, 1317, 1412, 1609
EX-W	0829	0.0	0	20.9	0	0	-	-	Sample @ 0936, 1104, 1211, 1315, 1410, 1607

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 1 of

Date: <i>9/20/17</i>	Monitoring Personnel: <i>AP</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>partly cloudy</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchle</i>	Excavation Summary: <i>air monitoring for DB-2 excavation. Excavating in SW corner.</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	@ 0700 by AP	@ 0700 by AP	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0740	0.0	0	20.9	0	0	-	-	same @ 0846, 0933, 1052, 1206, 1358, 1410, 1520, 1627
AM-2	0741	0.0	0	20.9	0	0	-	-	same @ 0847, 0934, 1053, 1207, 1359, 1411, 1521, 1624
AM-3	0742	0.0	0	20.9	0	0	-	-	same @ 0848, 0935, 1054, 1208, 1300, 1412, 1522, 1625
AM-4	0747	0.0	0	20.9	0	0	-	-	same @ 0853, 0941, 1059, 1213, 1305, 1417, 1527, 1630
AM-5	0748	0.0	0	20.9	0	0	-	-	same @ 0854, 0942, 1100, 1214, 1306, 1418, 1528, 1631
AM-6	0749	0.0	0	20.9	0	0	-	-	same @ 0855, 0943, 1101, 1215, 1307, 1419, 1529, 1632
AM-7	0750	0.0	0	20.9	0	0	-	-	same @ 0856, 0944, 1102, 1216, 1308, 1420, 1530, 1633
AM-8	0737	0.0	0	20.9	0	0	-	-	same @ 0813, 0930, 1049, 1203, 1255, 1407, 1517, 1620
AM-9	0738	0.0	0	20.9	0	0	-	-	same @ 0814, 0931, 1050, 1204, 1256, 1408, 1518, 1621
AM-10	0739	0.0	0	20.9	0	0	-	-	same @ 0815, 0932, 1051, 1205, 1257, 1409, 1519, 1622

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Page 2 of

Date: <i>9/20/17</i>	Monitoring Personnel: <i>AP</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>partly cloudy</i>	ARCADIS Site H&S Supervisor: <i>Ryan Braachla</i>	Excavation Summary: <i>air monitoring for DB-2 excavation. Excavating in SW corner.</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	<i>5 Gas</i>	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	<i>Rae</i>	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	<i>Multi Rae +</i>	By:	<i>@ 0720 by AP</i>	<i>@ 0720 by AP</i>	

Location	Meter Readings						Color Tubes		Comments
	Time	VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-N	<i>0746</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same @ 0852, 0940, 1058, 1212, 1304, 1416, 1526, 1629</i>
EX-S	<i>0744</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same @ 0850, 0937, 1056, 1210, 1302, 1414, 1524, 1627</i>
EX-E	<i>0745</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same @ 0851, 0938, 1057, 1211, 1303, 1415, 1525, 1628</i>
EX-W	<i>0743</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same @ 0849, 0936, 1055, 1209, 1301, 1413, 1523, 1626</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9-21-17		Monitoring Personnel: Joe Latham			Monitoring Station ID: Former Unocal Edmonds Terminal					
Weather: Rain/Sunny		ARCADIS Site H&S Supervisor: Ryan Brauchla		Excavation Summary: Air Monitoring for DB-2 Excavation. Excavating in SW Corner.						
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT		ARCADIS Project Manager: Scott Zorn								
Monitoring Equipment							Calibration Data			
Type:	PID	4 Gas		5 Gas			Type:	Ashtead	Ashtead	
Brand:	Rae	Rae		Rae			Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae		Multi Rae +			By:	@ 0700 JL	@ 0700 JL	
Location	Time	Meter Readings					Color Tubes		Comments	
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S		
AM-1	0730	0.0	0	20.9	0	0	-	-	Same @ 0834, 0934, 1033, 1133, 1233, 1333, 1433, 1533, 1633	
AM-2	0731	0.0	0	20.9	0	0	-	-	Same @ 0835, 0935, 1035, 1135, 1235, 1335, 1435, 1535, 1635	
AM-3	0732	0.0	0	20.9	0	0	-	-	Same @ 0836, 0936, 1036, 1136, 1236, 1336, 1436, 1536, 1636	
AM-4	0733	0.0	0	20.9	0	0	-	-	Same @ 0841, 0941, 1041, 1141, 1241, 1341, 1441, 1541, 1641	
AM-5	0734	0.0	0	20.9	0	0	-	-	Same @ 0842, 0942, 1042, 1142, 1242, 1342, 1442, 1542, 1642	
AM-6	0736	0.0	0	20.9	0	0	-	-	Same @ 0843, 0944, 1043, 1142, 1243, 1343, 1443, 1543, 1643	
AM-7	0737	0.0	0	20.9	0	0	-	-	Same @ 0844, 0945, 1044, 1143, 1244, 1344, 1444, 1544, 1644	
AM-8	0738	0.0	0	20.9	0	0	-	-	Same @ 0830, 0930, 1030, 1130, 1230, 1330, 1430, 1530, 1630	
AM-9	0739	0.0	0	20.9	0	0	-	-	Same @ 0831, 0931, 1031, 1131, 1231, 1331, 1431, 1531, 1631	
AM-10	0741	0.0	0	20.9	0	0	-	-	Same @ 0833, 0933, 1032, 1132, 1232, 1332, 1432, 1532, 1632	

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9-21-17		Monitoring Personnel: Joe Latham			Monitoring Station ID: Former Unocal Edmonds Terminal				
Weather: Rain/Sunny		ARCADIS Site H&S Supervisor: Ryan Brauchla		Excavation Summary: Air Monitoring for DB-2 Excavation, Excavating in SW Corner.					
Shift: DAY NIGHT		ARCADIS Project Manager: Scott Zorn							
Monitoring Equipment							Calibration Data		
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead			
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas			
Model:	Multi Rae	Q Rae	Multi Rae +	By:	@0700 JL	@0700 JL			
Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-W	0732	0.0	0	20.9	0	0	-	-	Same @ 0837, 0937, 1037, 1137, 1237, 1337, 1437, 1537, 1637
EX-S	0733	0.0	0	20.9	0	0	-	-	Same @ 0838, 0938, 1038, 1138, 1238, 1338, 1438, 1538, 1638
EX-E	0733	0.0	0	20.9	0	0	-	-	Same @ 0839, 0939, 1039, 1139, 1239, 1339, 1439, 1539, 1639
EX-N	0734	0.0	0	20.9	0	0	-	-	Same @ 0840, 0940, 1040, 1140, 1240, 1340, 1440, 1540, 1640

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>9/22/17</i>	Monitoring Personnel: <i>AP</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>Sunny, clear</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for DB-d excavation. Excavating along C line</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	AP @ 0700	AP @ 0700	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0725	0.0	0	20.9	0	0	-	-	same @ 0939, 1057, 1231, 1335, 1454, 1643
AM-2	0726	0.0	0	20.9	0	0	-	-	same @ 0940, 1053, 1235, 1336, 1455, 1644
AM-3	0727	0.0	0	20.9	0	0	-	-	same @ 0941, 1057, 1236, 1337, 1456, 1645
AM-4	0732	0.0	0	20.9	0	0	-	-	same @ 0946, 1104, 1241, 1342, 1501, 1650
AM-5	0733	0.0	0	20.9	0	0	-	-	same @ 0947, 1105, 1242, 1343, 1502, 1651
AM-6	0734	0.0	0	20.9	0	0	-	-	same @ 0948, 1106, 1243, 1344, 1503, 1652
AM-7	0735	0.0	0	20.9	0	0	-	-	same @ 0949, 1107, 1244, 1345, 1504, 1653
AM-8	0722	0.0	0	20.9	0	0	-	-	same @ 0936, 1054, 1221, 1322, 1451, 1640
AM-9	0723	0.0	0	20.9	0	0	-	-	same @ 0937, 1055, 1222, 1323, 1452, 1641
AM-10	0724	0.0	0	20.9	0	0	-	-	same @ 0938, 1056, 1223, 1324, 1453, 1642

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>9/22/17</i>	Monitoring Personnel: <i>AP</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>Sunny, clear</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for DB-t excavation. Excavating along C line.</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	AP @ 0700	AP @ 0700	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
<i>EX-N</i>	<i>0731</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>—</i>	<i>—</i>	
<i>EX-S</i>	<i>0729</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>—</i>	<i>—</i>	<i>Same @ 0945, 1103, 1240, 1341, 1500, 1649</i>
<i>EX-E</i>	<i>0730</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>—</i>	<i>—</i>	<i>Same @ 0943, 1101, 1238, 1339, 1458, 1647</i>
<i>EX-W</i>	<i>0728</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>—</i>	<i>—</i>	<i>Same @ 0944, 1102, 1239, 1340, 1459, 1648</i>
									<i>Same @ 0942, 1100, 1237, 1338, 1457, 1646</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9-25-17		Monitoring Personnel: Joe Latham			Monitoring Station ID: Former Unocal Edmonds Terminal				
Weather: Cloudy		ARCADIS Site H&S Supervisor: Ryan Brauchla			Excavation Summary: Air monitoring for DB-2 Excavation. Excavating along C line.				
Shift: <u>DAY</u> NIGHT		ARCADIS Project Manager: Scott Zorn							
Monitoring Equipment									
Type:	PID			4 Gas			5 Gas		
Brand:	Rae			Rae			Rae		
Model:	Multi Rae			Q Rae			Multi Rae +		
					Calibration Data				
Type:	Ashtead				Ashtead				
Gas:	Isobutylene 100 ppm				Multi gas				
By:	JL @ 0745				JL @ 0745				
Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0804	0.0	0	20.9	0	0	-	-	Same @
AM-2	0805	0.0	0	20.9	0	0	-	-	0904, 1004, 1104, 1204, 1404, 1504, 1604 Same @
AM-3	0806	0.0	0	20.9	0	0	-	-	0905, 1005, 1105, 1205, 1405, 1505, 1605 Same @
AM-4	0811	0.0	0	20.9	0	0	-	-	0906, 1006, 1106, 1206, 1406, 1506, 1606 Same @
AM-5	0812	0.0	0	20.9	0	0	-	-	0911, 1011, 1111, 1211, 1411, 1511, 1611 Same @
AM-6	0814	0.0	0	20.9	0	0	-	-	0912, 1012, 1112, 1212, 1412, 1512, 1612 Same @
AM-7	0815	0.0	0	20.9	0	0	-	-	0914, 1014, 1114, 1214, 1414, 1514, 1614 Same @
AM-8	0800	0.0	0	20.9	0	0	-	-	0915, 1015, 1115, 1215, 1415, 1515, 1615 Same @
AM-9	0801	0.0	0	20.9	0	0	-	-	0900, 1000, 1100, 1200, 1400, 1500, 1600 Same @
AM-10	0803	0.0	0	20.9	0	0	-	-	0901, 1001, 1101, 1201, 1401, 1501, 1601 Same @
									0903, 1003, 1103, 1203, 1403, 1503, 1603

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9-25-17	Monitoring Personnel: Joe Latham	Monitoring Station ID: Former Unocal Edmonds Terminal
Weather: Cloudy	ARCADIS Site H&S Supervisor: Ryan Brauchla	Excavation Summary: Air Monitoring for DB-2 Excavation. Excavating along C Line.
Shift: <u>DAY</u> NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	JL@0745	JL@0745	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-W	0807	0.0	0	20.9	0	0	-	-	Same @ 0907, 1007, 1107, 1207, 1407, 1507, 1607
EX-S	0808	0.0	0	20.9	0	0	-	-	Same @ 0908, 1008, 1108, 1208, 1408, 1508, 1608
EX-E	0809	0.0	0	20.9	0	0	-	-	Same @ 0909, 1009, 1109, 1209, 1409, 1509, 1609
EX-N	0810	0.0	0	20.9	0	0	-	-	Same @ 0910, 1010, 1110, 1210, 1410, 1510, 1610

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>9/26/17</i>	Monitoring Personnel: <i>AP</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>Fog in AM, sunny clear</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for DR-t excavation. Excavating & backfill in SW corner</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	<i>AP @ 0715</i>	<i>AP @ 0715</i>	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	<i>0803</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	
AM-2	<i>0804</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	<i>Same @ 1005, 1115, 1217, 1324, 1429, 1538, 1637</i>
AM-3	<i>0805</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	<i>Same @ 1006, 1116, 1218, 1325, 1430, 1539, 1638</i>
AM-4	<i>0810</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	<i>Same @ 1007, 1117, 1219, 1326, 1431, 1540, 1639</i>
AM-5	<i>0811</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	<i>Same @ 1012, 1122, 1224, 1331, 1437, 1545, 1644</i>
AM-6	<i>0812</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	<i>Same @ 1013, 1123, 1225, 1332, 1438, 1546, 1645</i>
AM-7	<i>0813</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	<i>Same @ 1014, 1124, 1226, 1333, 1439, 1547, 1646</i>
AM-8	<i>0800</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	<i>Same @ 1015, 1125, 1227, 1334, 1440, 1548, 1647</i>
AM-9	<i>0801</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	<i>Same @ 1002, 1112, 1214, 1321, 1426, 1535, 1634</i>
AM-10	<i>0802</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	—	—	<i>Same @ 1003, 1113, 1215, 1322, 1427, 1536, 1635</i>
							—	—	<i>Same @ 1004, 1114, 1216, 1323, 1428, 1537, 1636</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <u>9/26/17</u>	Monitoring Personnel: <u>AP</u>	Monitoring Station ID: <u>Former Unocal Edmonds Terminal</u>
Weather: <u>Fog in AM, sunny clear</u>	ARCADIS Site H&S Supervisor: <u>Ryan Brauch</u>	Excavation Summary: <u>air monitoring for DB-d excavation Excavating & backfill in SW corner</u>
Shift: <u>(DAY)</u> NIGHT	ARCADIS Project Manager: <u>Scott Zorn</u>	

Monitoring Equipment				Calibration Data		
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas
Model:	Multi Rae	Q Rae	Multi Rae +	By:	AP @ 0715	AP @ 0715

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
EX-N	0809	0.0	0	20.9	0	0	-	-	
EX-S	0807	0.0	0	20.9	0	0	-	-	Same @ 1011, 1121, 1223, 1330, 1436, 1544, 1643
EX-E	0808	0.0	0	20.9	0	0	-	-	Same @ 1009, 1114, 1221, 1328, 1434, 1542, 1641
EX-W	0806	0.0	0	20.9	0	0	-	-	Same @ 1010, 1120, 1222, 1329, 1435, 1543, 1642
									Same @ 1028, 1118, 1220, 1327, 1433, 1541, 1640

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: 9/27/17	Monitoring Personnel: John Lilly	Monitoring Station ID:
Weather: Sunny	ARCADIS Site H&S Supervisor: Sam Miles	Excavation Summary: excavation (APT/EXPT)
Shift: DAY NIGHT	ARCADIS Project Manager: Scott Zorn	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae		Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi-Rae Plus	By:	John Lilly	John Lilly	

Location	Time	Meter Readings					Color Tubes		SAP - Same as previous reading										
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	Comments										
AMS-8	0800	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
AMS-9	0802	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
AMS-10	0803	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
AMS-1	0805	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
AMS-2	0807	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
AMS-3	0806	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
EX-W	0808	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
EX-S	0809	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
EX-E	0810	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
EX-N	0812	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
AMS-4	0815	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
AMS-5	0817	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
AMS-6	0818	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP
AMS-7	0819	0	0	20.9	0	0			SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP	SAP

Arcadis

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <u>9/28/17</u>		Monitoring Personnel: <u>AP</u>			Monitoring Station ID: <u>Former Unocal Edmonds Terminal</u>				
Weather: <u>sunny, clear</u>		ARCADIS Site H&S Supervisor: <u>Jason Little</u>		Excavation Summary: <u>air & dust monitoring for stockpile loadout</u>					
Shift: <u>(DAY)</u> NIGHT		ARCADIS Project Manager: <u>Scott Zorn</u>							
Monitoring Equipment							Calibration Data		
Type:	PID	4 Gas		5 Gas		Type:	Ashtead		
Brand:	Rae	Rae		Rae		Gas:	Isobutylene 100 ppm		
Model:	Multi Rae	Q Rae		Multi Rae +		By:	AP @ 0700		
Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0741	0.0	0	20.9	0	0	-	-	same @ 0914, 1002, 1142, 1248, 1353, 1515
AM-2	0742	0.0	0	20.9	0	0	-	-	same @ 0915, 1009, 1113, 1249, 1354, 1516
AM-3	0743	0.0	0	20.9	0	0	-	-	same @ 0916, 1010, 1117, 1250, 1355, 1517
AM-4	0748	0.0	0	20.9	0	0	-	-	same @ 0921, 1015, 1143, 1255, 1400, 1522
AM-5	0749	0.0	0	20.9	0	0	-	-	same @ 0922, 1016, 1141, 1256, 1401, 1523
AM-6	0750	0.0	0	20.9	0	0	-	-	same @ 0923, 1017, 1145, 1257, 1402, 1524
AM-7	0751	0.0	0	20.9	0	0	-	-	same @ 0924, 1018, 1146, 1258, 1403, 1525
AM-8	0738	0.0	0	20.9	0	0	-	-	same @ 0911, 1005, 1109, 1245, 1350, 1512
AM-9	0739	0.0	0	20.9	0	0	-	-	same @ 0912, 1006, 1110, 1246, 1351, 1513
AM-10	0740	0.0	0	20.9	0	0	-	-	same @ 0913, 1007, 1111, 1247, 1352, 1514

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>9/28/17</i>	Monitoring Personnel: <i>AP</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>Sunny, clear</i>	ARCADIS Site H&S Supervisor: <i>Jason Little</i>	Excavation Summary: <i>air & dust monitoring for stockpile loadout</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment						
Type:	PID	4 Gas		5 Gas		Calibration Data
Brand:	Rae	Rae	Rae	Rae	Rae	Type: Ashtead
Model:	Multi Rae	Q Rae	Multi Rae +	Multi Rae +	Multi Rae +	Ashtead
				Gas:	Isobutylene 100 ppm	Multi gas
				By:	<i>AP @ 0700</i>	<i>AP @ 0700</i>

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
<i>AX-N</i>	<i>0746</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	
<i>EX-5</i>	<i>0744</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same @ 0919, 1013, 1041, 1253, 1358, 1520</i>
<i>EX-E</i>	<i>0747</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same @ 0917, 1011, 1115, 1251, 1356, 1518</i>
<i>AX-W</i>	<i>0745</i>	<i>0.0</i>	<i>0</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>same @ 0920, 1014, 1040, 1254, 1359, 1521</i>
									<i>same @ 0913, 1012, 1116, 1252, 1357, 1519</i>

AIR MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, WA

Date: <i>9/29/17</i>	Monitoring Personnel: <i>AP</i>	Monitoring Station ID: <i>Former Unocal Edmonds Terminal</i>
Weather: <i>overcast, rain, wind</i>	ARCADIS Site H&S Supervisor: <i>Ryan Brauchla</i>	Excavation Summary: <i>air monitoring for DR-1 excavation. Excavating along E-line.</i>
Shift: <input checked="" type="radio"/> DAY <input type="radio"/> NIGHT	ARCADIS Project Manager: <i>Scott Zorn</i>	

Monitoring Equipment				Calibration Data			
Type:	PID	4 Gas	5 Gas	Type:	Ashtead	Ashtead	
Brand:	Rae	Rae	Rae	Gas:	Isobutylene 100 ppm	Multi gas	
Model:	Multi Rae	Q Rae	Multi Rae +	By:	AP @ 0715	AP @ 0715	

Location	Time	Meter Readings					Color Tubes		Comments
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S	
AM-1	0750	0.0	0	20.9	0	0	-	-	
AM-2	0751	0.0	0	20.9	0	0	-	-	Same @ 0913, 1025, 1219, 1327, 1447, 1609
AM-3	0752	0.0	0	20.9	0	0	-	-	Same @ 0913, 1026, 1220, 1325, 1448, 1610
AM-4	0757	0.0	0	20.9	0	0	-	-	Same @ 0914, 1027, 1221, 1326, 1449, 1611
AM-5	0758	0.0	0	20.9	0	0	-	-	Same @ 0919, 1032, 1226, 1331, 1454, 1616
AM-6	0759	0.0	0	20.9	0	0	-	-	Same @ 0920, 1033, 1227, 1332, 1455, 1617
AM-7	0800	0.0	0	20.9	0	0	-	-	Same @ 0921, 1034, 1228, 1333, 1456, 1619
AM-8	0747	0.0	0	20.9	0	0	-	-	Same @ 0922, 1035, 1229, 1334, 1457, 1619
AM-9	0748	0.0	0	20.9	0	0	-	-	Same @ 0909, 1022, 1216, 1321, 1444, 1606
AM-10	0749	0.0	0	20.9	0	0	-	-	Same @ 0910, 1023, 1217, 1322, 1445, 1607
									Same @ 0911, 1024, 1218, 1323, 1446, 1608

AIR MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, WA

Date: 9/29/17

Weather: overcast, rain, wind

Shift: DAY

Personnel: AP

Supervisor: Ryan Brauchla

Plant Manager: Scott Zorn

Monitoring Station ID: Former Unocal Edmonds Station

Excavation Summary: air monitoring for DB-d excavation. Excavating along E-line.

Type:	FID	4 Gas	5 Gas	Type	Ashtech:
Brand:	Rae	Rae		Gas	Isobutylene 100 ppm
Model:	MultiRae	MultiRae	MultiRae+	By:	AA @ 0715 / AP @ 0715

Location	Time	General Readings:						
		VOC ppm	LEL %	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	Benzene	H ₂ S
EX-N	0755	0.0	0	20.9	0	0	-	-
EX-S	0754	0.0	0	20.9	0	0	-	-
EX-E	0756	0.0	0	20.9	0	0	-	-
EX-W	0753	0.0	0	20.4	0	0	-	-

Excavation Data	
Ashtech:	
Isobutylene 100 ppm	
Multi gas	
By:	AA @ 0715 / AP @ 0715

Comments
Sample @ 0917, 1030, 1224, 1329, 1452, 1614
Sample @ 0916, 1029, 1223, 1328, 1450, 1613
Sample @ 0913, 1031, 1225, 1330, 1453, 1615
Sample @ 0915, 1028, 1222, 1327, 1450, 1612

AIR MONITORING ELEC LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, WA

Date: 10/2/17
 Weather: Overcast
 Shift: DAY
 1 GHT

Monitoring Personnel:
AP
 ARCADIS Site H&S Supervisor:
Jason Little
 ARCADIS Project Manager:
Scott Zorn

Monitoring Station ID:
Former Unocal Edmonds Terminal

Excavation Summary:
air monitoring for DB-2 excavation.
Excavating along south wall of excavation.

Monitoring Equipment		Calibration Data							
Type:	PID	4 Gas							
Brand:	Rae	Type:	Ashtead						
Model:	Mu Rae	Gas:	Isobutane 100 ppm Multi gas						
Meter Readings:		By:	AP @ 0730						
Location	Time	VOC ppm	LEL (%)	O ₂ (%)	Color Tubes			Comments	
					H ₂ S (ppm)	CO (ppm)	Benzene		
AM-1	0759	0.0	0	20.9	0	0	-	-	
AM-2	0800	0.0	0	20.9	0	0	-	-	same @ 0900, 0956, 1059, 1321, 1428, 1542
AM-3	0803	0.0	0	20.9	0	0	-	-	same @ 0901, 0957, 1100, 1322, 1429, 1543
AM-4	0808	0.0	0	20.9	0	0	-	-	same @ 0902, 0958, 1101, 1323, 1430, 1544
AM-5	0809	0.0	0	20.9	0	0	-	-	same @ 0907, 1003, 1106, 1328, 1435, 1549
AM-6	0810	0.0	0	20.9	0	0	-	-	same @ 0908, 1004, 1107, 1329, 1436, 1550
AM-7	0811	0.0	0	20.9	0	0	-	-	same @ 0909, 1005, 1108, 1330, 1437, 1551
AM-8	0756	0.0	0	20.9	0	0	-	-	same @ 0910, 1006, 1109, 1331, 1438, 1552
AM-9	0757	0.0	0	20.9	0	0	-	-	same @ 0857, 0953, 1056, 1318, 1425, 1539
AM-10	0758	0.0	0	20.9	0	0	-	-	same @ 0858, 0954, 1057, 1319, 1426, 1540
									same @ 0859, 0955, 1058, 1320, 1427, 1541

AIR MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, WA

Date: 10/2/17
 Weather: overcast
 Shift: DAY | NIGHT
 Monitoring Personnel: AP
 ARCADIS Site H&S Supervisor: Jason Little
 ARCADIS Project Manager: Scott Zorn
 Monitoring Station ID: Former Unocal Edmonds Terminal
 Excavation Summary: air monitoring for DB-2 excavation. Excavating along south wall of excavation.

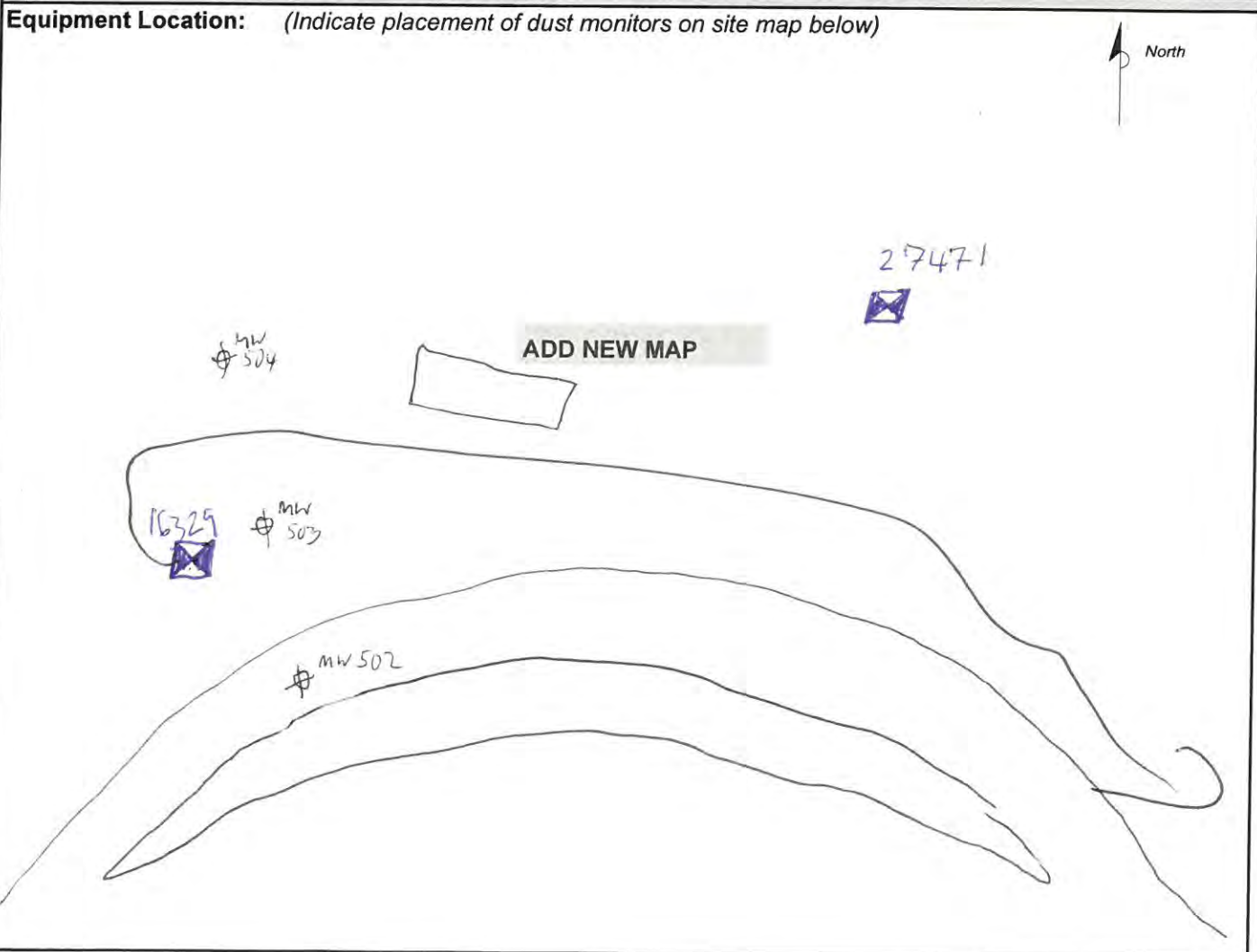
Monitoring Equipment		Calibration Data	
Type: <u>PID</u>	<u>4 Gas</u>	Type: <u>Ashtead</u>	<u>Ashtead</u>
Brand: <u>Rae</u>	<u>Rae</u>	Gas: <u>Isobutylene 100 ppm</u>	<u>Multi gas</u>
Model: <u>Multi Rae</u>	<u>Q Rae</u>	By: <u>AP @ 0730</u>	<u>AP @ 0730</u>

Location	Time	Meter Readings			Color Tubes		Comments		
		VOC (ppm)	LEL (%)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)		Benzene	H ₂ S
EX-N	0806	0.0	0	20.9	0	0	-	-	same @ 0905, 1001, 1104, 1326, 1433, 1547 same @ 0904, 1000, 1103, 1325, 1472, 1546 same @ 0906, 1002, 1105, 1327, 1434, 1548 same @ 0903, 0959, 1102, 1324, 1431, 1545
EX-S	0805	0.0	0	20.9	0	0	-	-	
EX-E	0807	0.0	0	20.9	0	0	-	-	
EX-W	0804	0.0	0	20.9	0	0	-	-	

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 08-01-2017	Shift: DAY 1 NIGHT	Weather: Sunny & Clear	Page: 1 of 2
Monitoring Personnel: Eric Krueger, Ryan Brauchla		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for weedwhacking & grubbing. Monitors set up at 0830
Monitoring Equipment:	TSE DustTrak DRX STATION	TSE DustTRAK DRX HANDHELD	
Meter ID:	27471	16329	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	Data averaged every 10 seconds Recorded/checked hourly	Data averaged every 10 seconds Recorded/checked hourly	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			



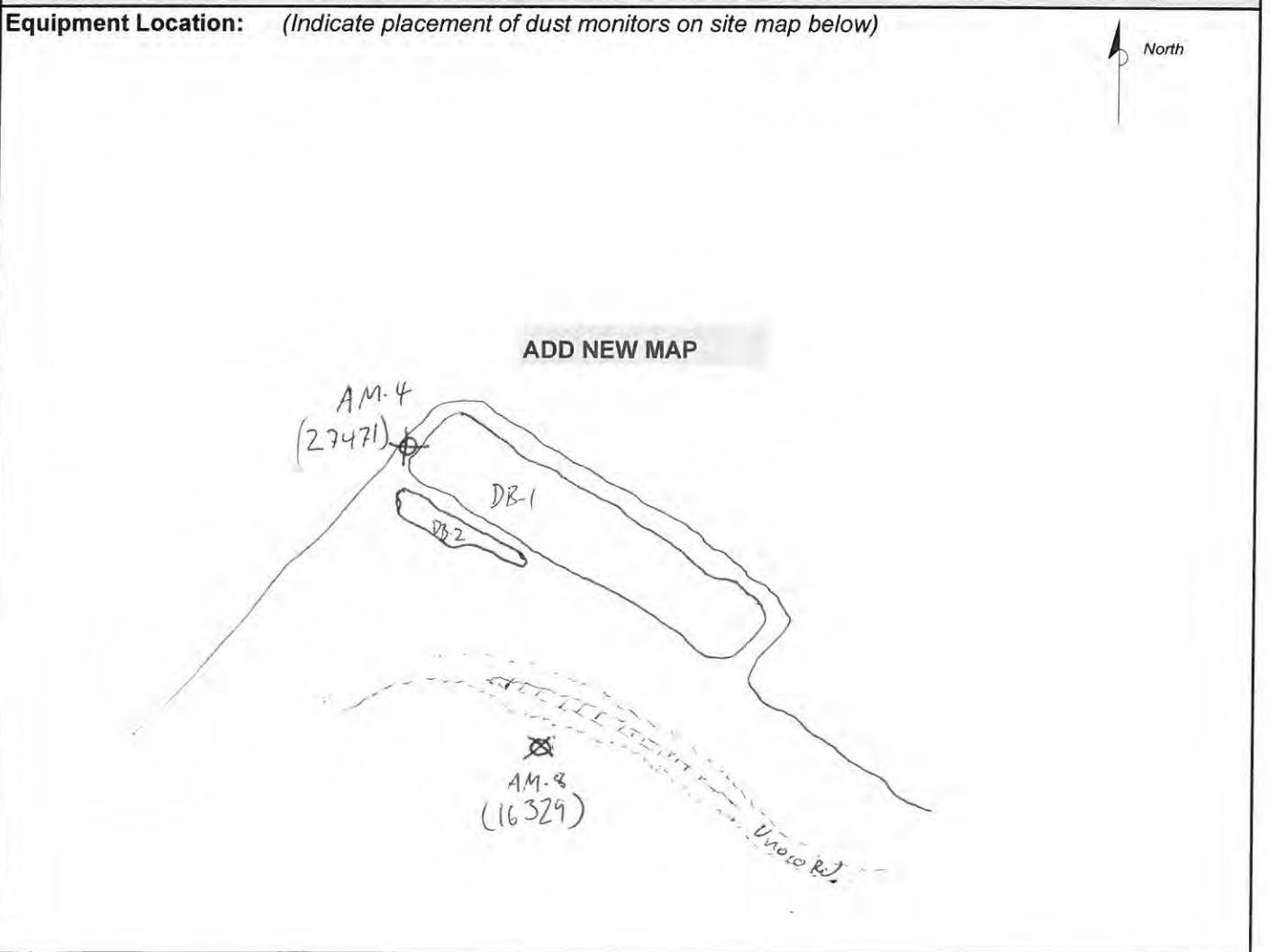
DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel: Eric Krueger, Ryan Brautla	Date: 08-01-2017	Page: 2 of 2
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$) mg/m ³		Comments		
		Real-Time	TWA			
0931	27471 UPWIND	0.011	0.001	moved to downwind position at MW-531 @ 0930		
0933	16329 DOWNWIND	0.008	0.001	moved to upwind position at entry gate @ 0930		
1020	27471 DOWNWIND	0.011	0.002			
1030	16329 UPWIND	0.007	0.002			
1125	27471 DOWNWIND	0.011	0.004			
1137	16329 UPWIND	0.003	0.003			
1231	27471 DOWNWIND	0.007	0.005			
1238	16329 UPWIND	0.005	0.005	0% battery		
1338	27471 DOWNWIND	0.014	0.006			
1345	16329 UPWIND	0.015	0.004	battery dead - restarted for Real-Time reading		
1425	16329 UPWIND	0.013	0.005	" " " "		
1439	27471 DOWNWIND	0.023	0.008			
1528	16329 UPWIND	0.036	0.006	battery dead - restarted for Real-Time reading		
1538	27471 DOWNWIND	0.024	0.011			
1623	27421 DOWNWIND	0.011	0.012			
1633	16329 UPWIND	0.012	0.006	battery dead - restarted for Real-Time reading		

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-02-2017	Shift: <u>DAY</u> / NIGHT	Weather: Sunny, with smog	Page: 1 of 2
Monitoring Personnel: Eric Krueger, Ryan Brauchler		Prominent Wind Direction: <u>N</u> NW W SW S SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for weedwhacking and grubbing. Upwind monitor set at AM-4; downwind at AM-8. Significant smog today
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX Hand held	
Meter ID:	27471	16329	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	
Averaging Period:	10 hours 10 second intervals	10 hours 10 second intervals	
Datalogger On/Off?:	on, data not saved	on, data not saved	
(Record meter readings starting on page 2)			



DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel:	Date:	Page:
				Ryan Brauchle, Eric Krueger	08-02-2017	2 of 2
Time	Meter ID	Concentration (ug/m ³)mg/m ³		Comments		
		Real-Time	TWA			
0744	27471 UP	0.057	0.000	@ AM-4		
0745	16329 DOWN	0.049	0.000	@ AM-8		
0854	27471 UP	0.036	0.007			
0856	16329 DOWN	0.037	0.007			
0957	27471 UP	0.033	0.011			
0958	16329 DOWN	0.035	0.011			
1057	27471 UP	0.042	0.016			
1058	16329 DOWN	0.042	0.016			
1145	27471 UP	0.041	0.019			
1146	16329 DOWN	0.046	0.021			
1258	27471 UP	0.059	0.027			
1259	16329 DOWN	0.063	0.061	Battery dead - restarted for real time reading		
1345	27471 UP WIND	0.064	0.031			
1350	16329 DOWN WIND	0.073	0.031	Battery dead - restarted for real time reading		
1446	27471 UP WIND	0.085	0.041			
1452	16329 DOWN WIND	0.093	0.037	Battery dead - restarted for real time reading		
1552	27471 UP	0.089	0.048			
1555	16329 DOWN	0.093	0.045	Battery dead - restarted for real time reading		

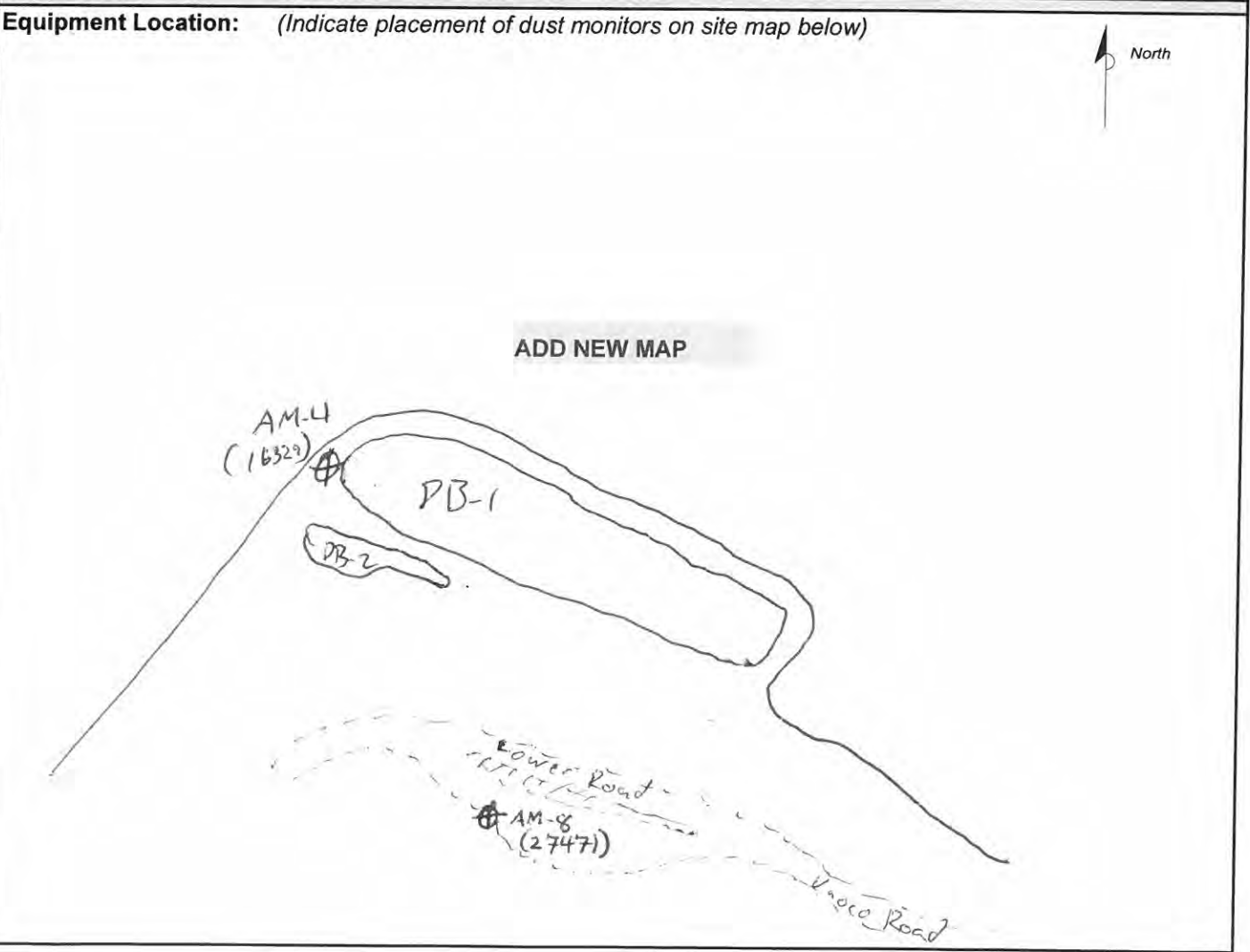
\\arcadis-us\officedata\Seattle-WA\COMMON\Data\Projects\Chevron\Edmonds Terminal\2017 Air Monitoring Control Plan\Appendices\C2.
Edmonds Dust monitoring field sheet\Pg2+ (Readings)

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-03-2017	Shift: DAY / NIGHT	Weather: Sunny & smoky	Page: 1 of 2
Monitoring Personnel: Eric Krueger, Ryan Brauchle		Prominent Wind Direction: N <u>NW</u> W SW S SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind
Monitoring Equipment:	TSI	TSI
Meter ID:	TSI DustTrak DRX Handheld 16329	TSI DustTrak DRX 27471
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀
Averaging Period:	Data averaged every 10 sec Recorded/checked hourly	Data are
Datalogger On/Off?:	on, not saved	on, not saved
(Record meter readings starting on page 2)		

Construction Summary/Notes:
Dust monitoring for weedwhacking & grubbing - Monitoring stations set up @



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings			Personnel:	Date:	Page:
			Erik Krucyer, Ryan Brauchle	08-03-2017	2 of 2
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$) mg/m^3		Comments	
		Real-Time	TWA		
0756	16329 UP	0.076	0.000	@ AM-4	
0800	27471 DOWN	0.077	0.000	@ AM-8	
0858	16329 UP	0.061	0.010		
0900	27471 DOWN	0.070	0.009		
1007	16329 UP	0.060	0.018		
1008	27471 DOWN	0.065	0.008		
1052	16329 UP	0.067	0.024		
1058	27471 DOWN	0.074	0.029		
1206	16329 UP	0.075	0.035		
1200	27471 DOWN	0.086	0.039		
1316	16329 UP	0.069	0.045	battery dead - unit restarted to collect real time data	
1309	27471 DOWN	0.076	0.051		
1359	16329 up/down	0.074	0.070	battery dead - unit restarted to collect real time data	
1402	27471 down	0.080	0.061		
1500	16329 UP	0.071	0.083	battery dead - unit restarted to collect real time data	
1502	27471 down	0.077	0.067		
1557	16329 UP	0.080	0.085	battery dead - unit restarted to collect real time data	
1559	27471 down	0.099	0.080		

DUST MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

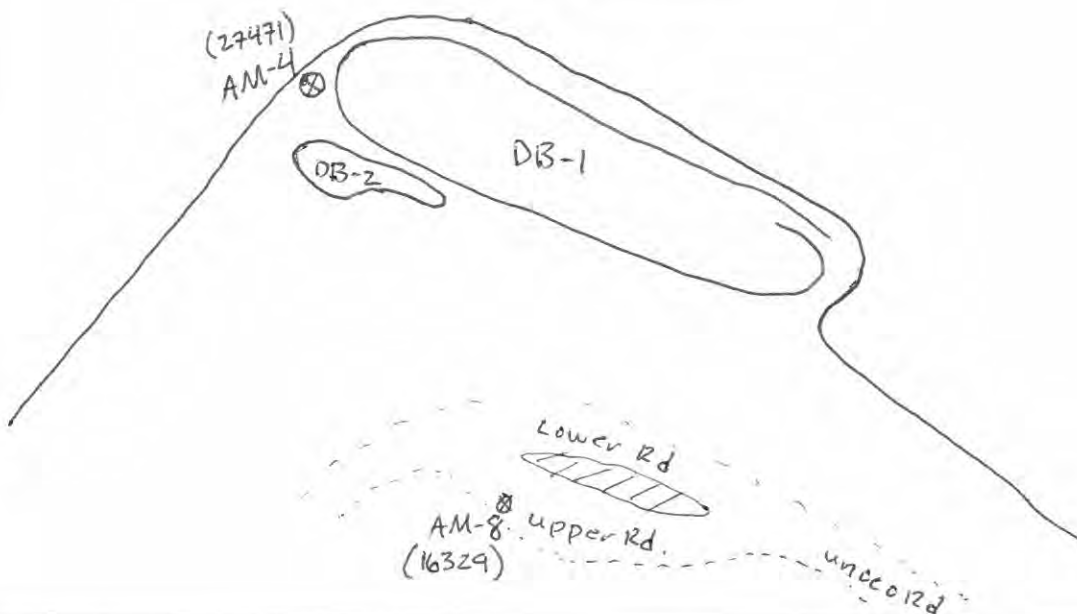
Date: 08-04-2017	Shift: DAY / NIGHT	Weather: Sunny & smoky	Page: 1 of 2
Monitoring Personnel: Eric Krueger		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitors set up for clearing and grubbing; monitors set up @ AM-8 (upwind) & AM-4 (downwind)
Monitoring Equipment:	TSI Dust Trak DRX	TSI Dust Trak DRX	
Meter ID:	16329	27471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	Data Averaged every 10 Sec.	Data averaged every 10 Sec.	
Datalogger On/Off?:	ON	ON	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP



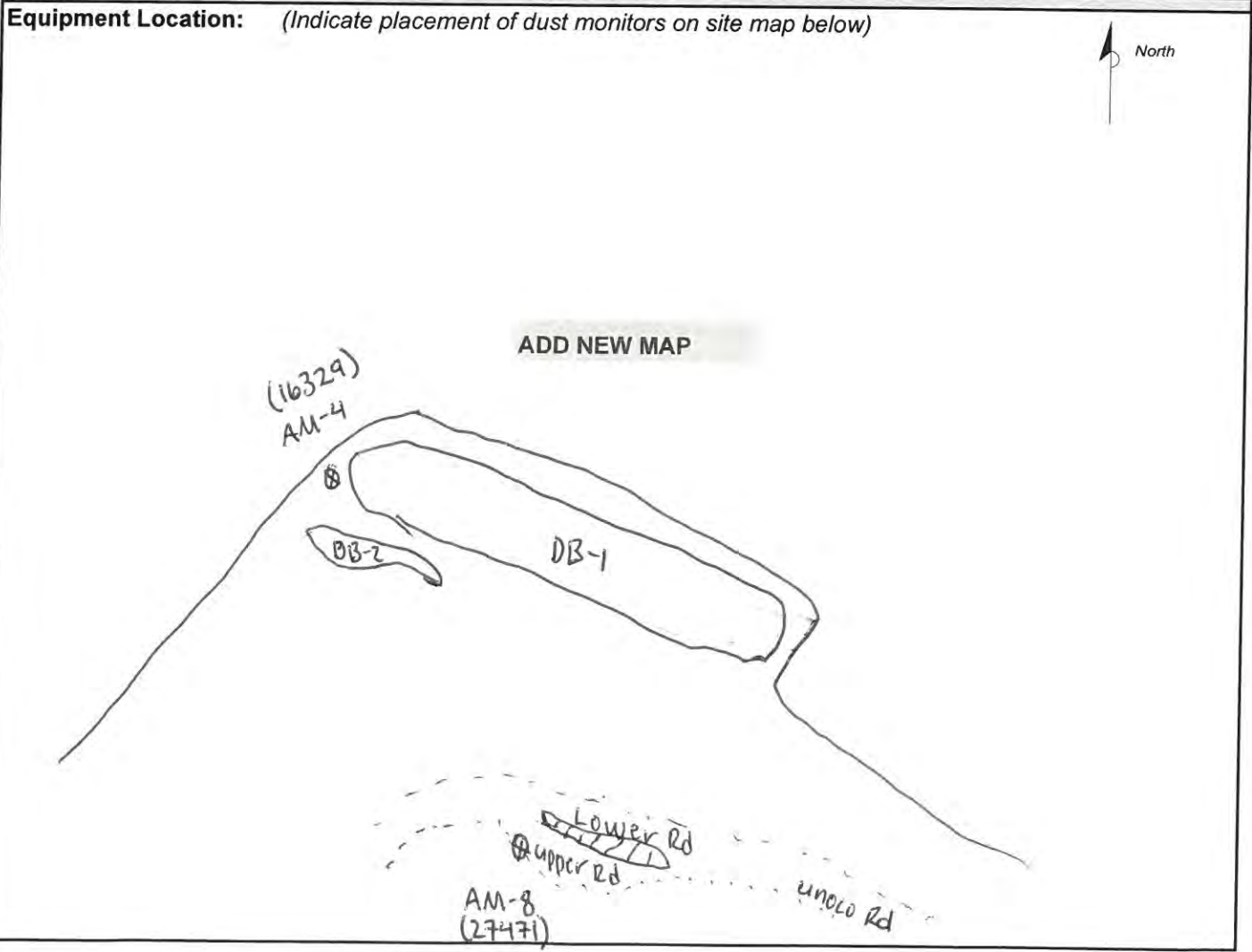
DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings			Personnel: Eric Krueger	Date: 08-04-2017	Page: 2 of 2
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$) mg/m^3		Comments	
		Real-Time	TWA		
0755	16329 upwind	0.119	0.000	@ AM-8 (upwind)	
0758	27471 downwind	0.016	0.000	@ AM-4 (downwind)	
0901	16329 upwind	0.016	0.017		
0904	27471 downwind	0.118	0.016		
0957	16329 upwind	0.115	0.029		
1000	27471 downwind	0.114	0.030		
1058	16329 upwind	0.111	0.040		
1100	27471 downwind	0.117	0.041		
1159	16329 upwind	0.061	0.057		
1201	27471 downwind	0.079	0.059		
1300	16329 upwind	0.059	0.062	Battery dead - restarted to collect real time data	
1302	27471 downwind	0.064	0.069		
1400	16329 upwind	0.061	0.063	Battery dead - restarted to collect real time data	
1402	27471 downwind	0.062	0.074		
1500	16329 upwind	0.061	0.061	Battery dead - restarted to collect real time data	
1502	27471 downwind	0.063	0.084		

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 8/7/17	Shift: DAY / NIGHT	Weather: Cloudy & Smoky	Page: 1 of 2
Monitoring Personnel:		Prominent Wind Direction: N <u>NW</u> W SW S SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for grabbing and clearing. Set up at AM-4 & AM-8.
Monitoring Equipment:	TSI Dust Trak DRX	TSI Dust Trak DRX	
Meter ID:	16329	27471	
Particulate Size:	PM _{2.5} <u>PM₁₀</u>	PM _{2.5} <u>PM₁₀</u>	
Averaging Period:	data averaged every 10 sec.	data averaged every 10 sec.	
Datalogger On/Off?:	ON, not saved	ON, not saved	
(Record meter readings starting on page 2)			



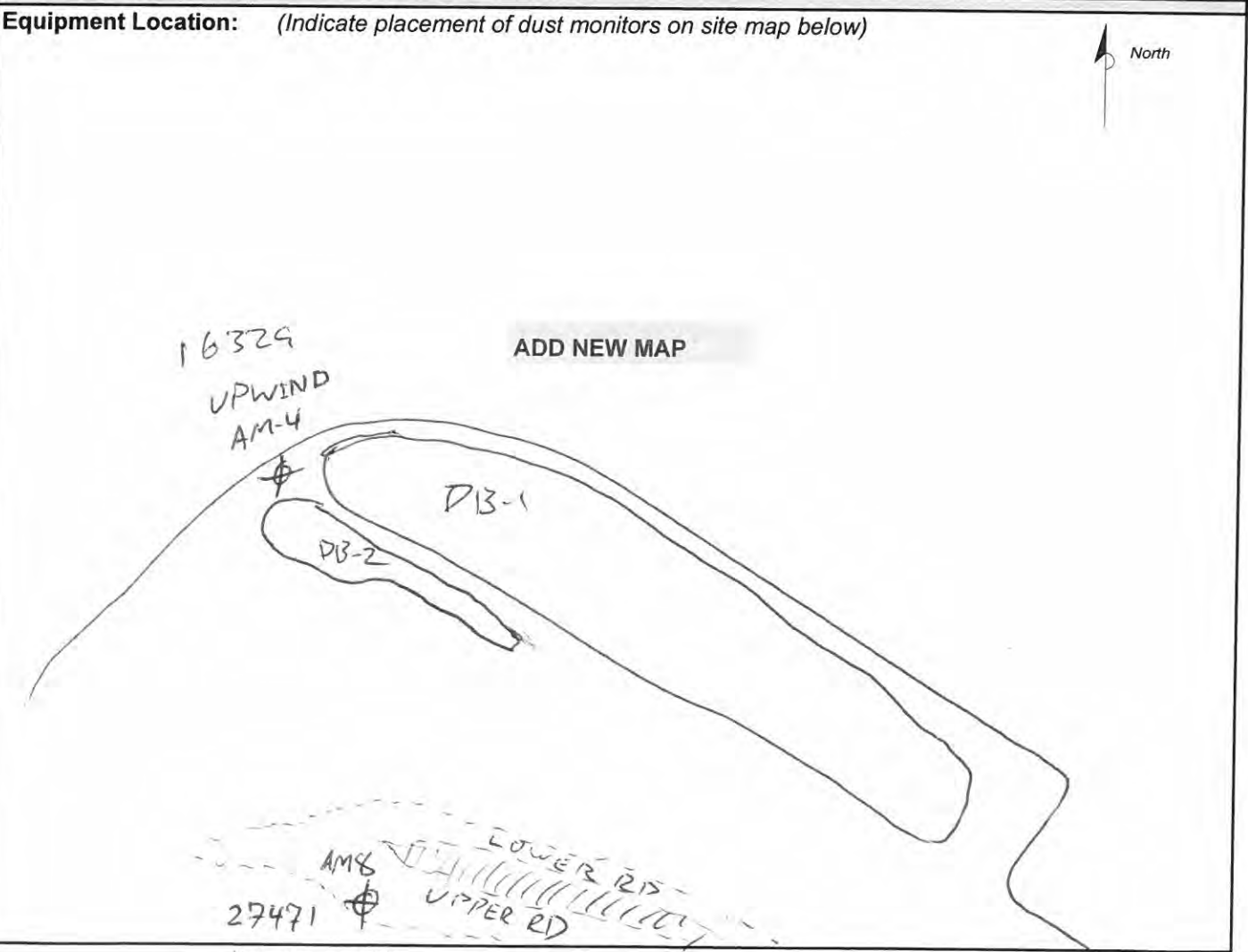
DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

Meter Readings			Personnel: Eric Krueger	Date: 8/7/17	Page: 2 of 2
Time	Meter ID	Concentration (ug/m ³) mg/m ³		Comments	
		Real-Time	TWA		
0805	16329 upwind	0.023	0.000	@ AM-4	
0807	27471 downwind	0.022	0.000	@ AM-8	
0940	16329 upwind	0.024	0.003		
0935	27471 downwind	0.026	0.004		
1023	16329 upwind	0.022	0.005		
1020	27471 downwind	0.021	0.006		
1138	16329 upwind	0.022	0.009*	batteries dead - restarted for realtime concentration	
1133	27421 downwind	0.024	0.010		
1231	16329 upwind	0.021	0.011*	batteries dead - restarted for realtime concentration	
1226	27421 downwind	0.025	0.013		
1333	16329 upwind	0.027	0.014*	batteries dead - restarted for realtime concentration	
1327	27421 downwind	0.035	0.017		
1426	16329 upwind	0.048	0.016*	batteries dead - restarted for realtime concentration	
1422	27421 downwind	0.048	0.021		
1530	16329 upwind	0.063	0.020*	batteries dead - restarted for realtime concentration	
1531	27421 downwind	0.070	0.030		
1655	16329 upwind	0.097	0.030*	batteries dead - restarted for realtime concentration	
1646	27421 downwind	0.044	0.000*	batteries dead - restarted for realtime concentration	

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 8-8-2017	Shift: DAY / NIGHT	Weather: calm, smoky	Page: 1 of 2
Monitoring Personnel: Ryan Brauhle		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for backfill dropoff. Dust suppression (water spray) in effect today
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	16329 HANDHELD	27471 STATION	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	10 sec	10 sec	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			



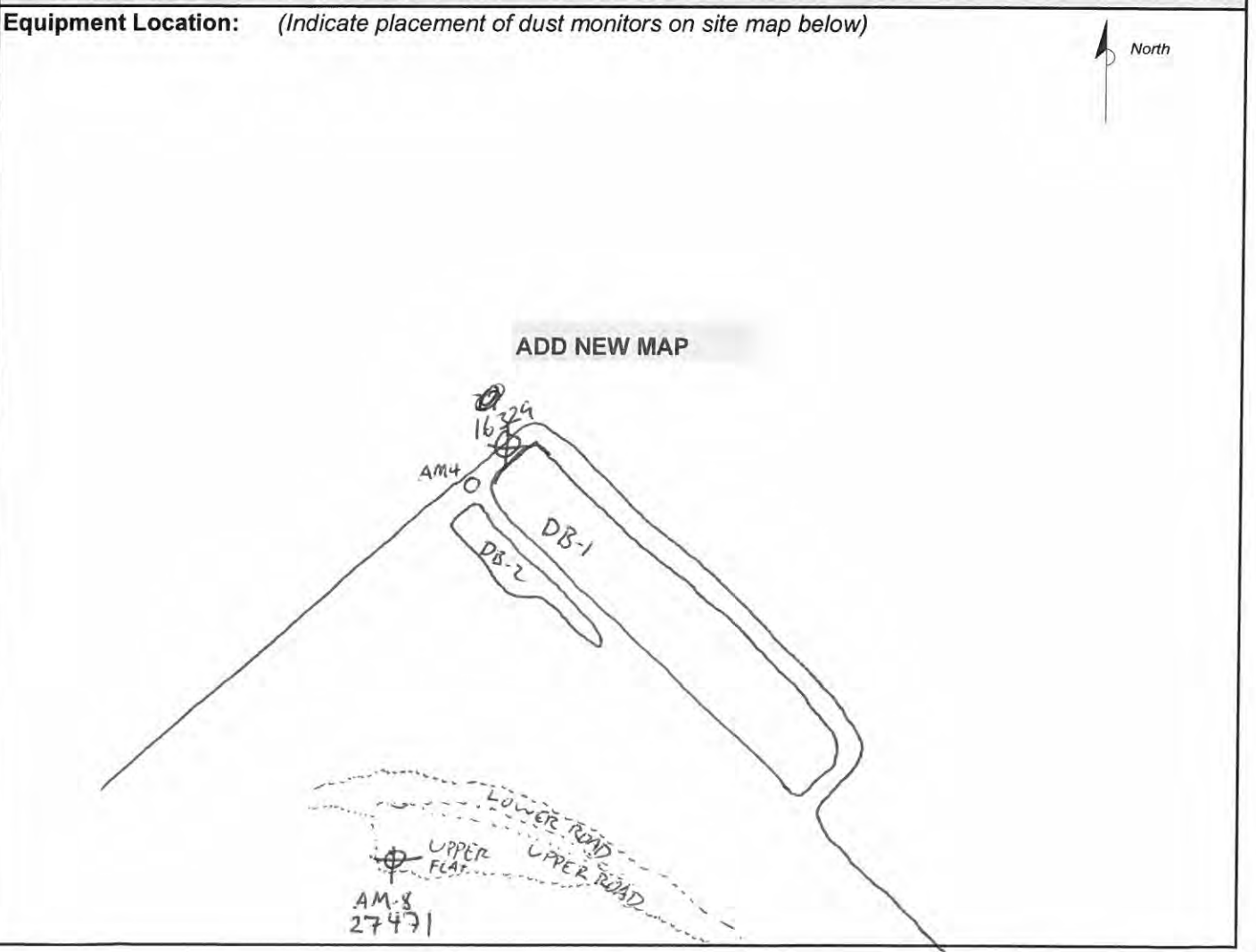
DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings			Personnel:	Date:	Page:
			Ryan Brauchla	8-8-2016	2 of 2
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$)		Comments	
		Real-Time	TWA		
0744	27471 Down	0.025	0.000	@ AM-8	
0750	16329 up	0.027	0.000	@ AM-4	
0845	27471 down	0.023	0.003		
0850	16329 up	0.021	0.003		
0945	27471 down	0.023	0.006		
0950	16329 up	0.021	0.006		
1045	27471 down	0.031	0.010		
1050	16329 up	0.022	0.009		
1141	27471 down	0.033	0.014		
1145	16329 up	0.024	0.012		
1247	27471 down	0.061	0.021		
1253	16329 up	0.051	0.017*	batteries dead - restarted unit for realtime data	
1340	27471 down	0.061	0.028		
1348	16329 up	0.053	0.021*	batteries dead - restarted unit for realtime data	
1547	27471 down	0.093	0.049		
1550	16329 up	0.092	0.020*	batteries dead - restarted unit for realtime data	

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 8-9-2017	Shift: DAY 1 NIGHT	Weather: calm, smoky	Page: 1 of 2
Monitoring Personnel: Ryan Brauchle		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for clearing & grubbing. Smoky weather continues to impact air quality. Due to clearing & grubbing activities near AM-4, the upwind monitor was placed at the electrical panel north of AM-4
Monitoring Equipment:	TSI DustTrack DRX HANDHELD	TSI DustTrack DRX	
Meter ID:	16329	27471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	10 s	10 s	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			



DUST MONITORING FIELD LOG

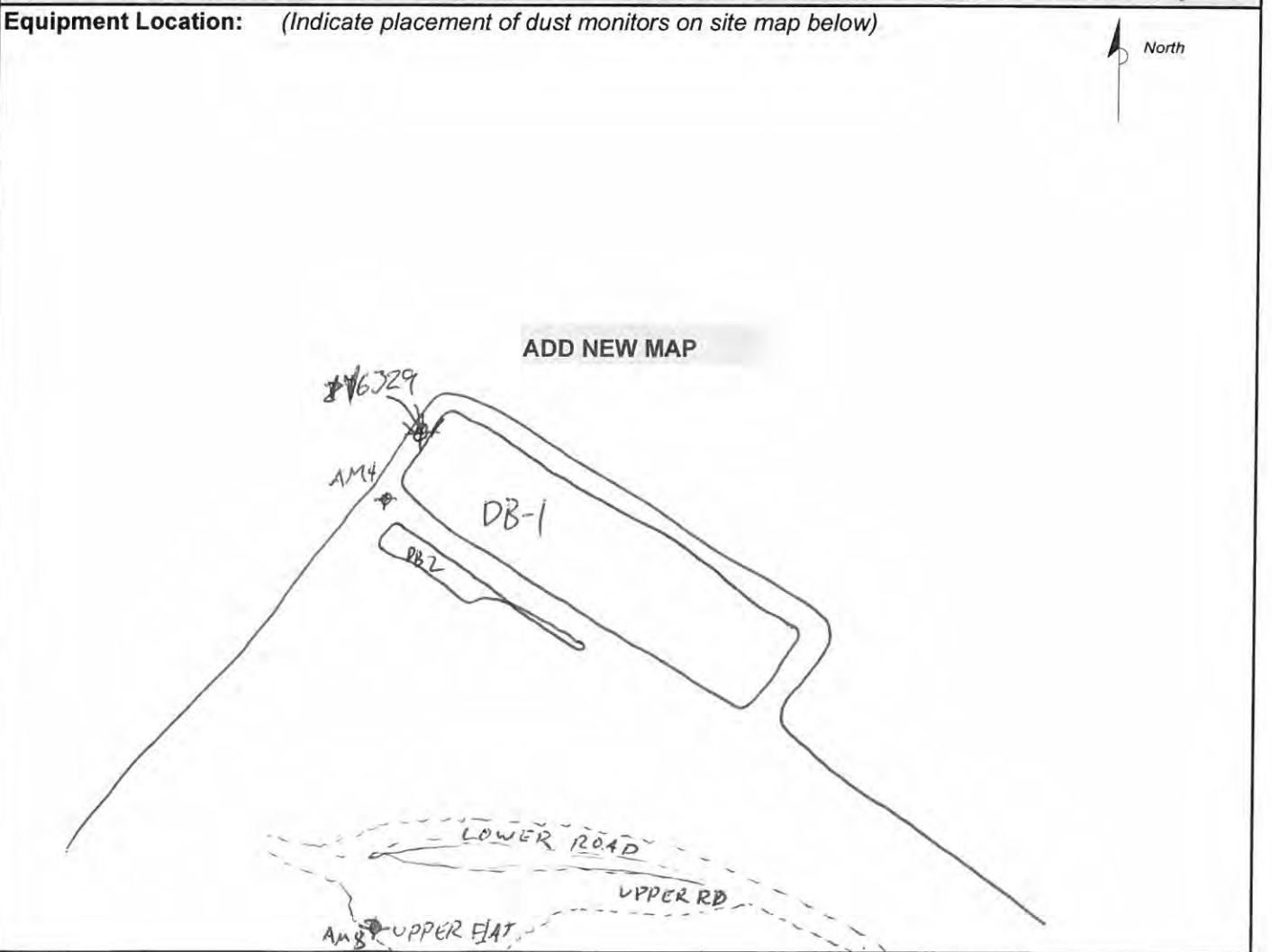
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

Meter Readings		Personnel: <i>Rynn Brauchla</i> <i>ed@unocal.com</i>	Date: 8-9-2017	Page: 2 of 2
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$)		Comments
		Real-Time	TWA	
0727	27471(d)	0.030	0.000	@ AM-8
0732	16329(u)	0.036	0.000	@ electrical panel - north of AM-4
0840	27471(d)	0.028	0.005	
0844	16329(u)	0.029	0.006	
0945	27471(d)	0.032	0.011	
0948	16329(u)	0.035	0.010	
1047	27471(d)	0.040	0.015	
1050	16329(u)	0.038	0.014	
1147	27471(d)	0.047	0.021	
1150	16329(u)	0.043	0.019	
1248	27471(d)	0.055 ^{0.059}	0.025	
1250	16329(u)	0.062	0.028	battery dead- restarted for real time reading
1347	27471(d)	0.060	0.032	
1350	16329(u)	0.063	0.030	battery dead- restarted for real time reading
1445	27471(d)	0.046	0.040	
1448	16329(u)	0.051	0.033	battery dead- restarted for real time reading
1545	27471(d)	0.048	0.042	
1548	16329(u)	0.052	0.035	battery dead- restarted for real time reading
1645	27471(d)	0.058	0.045	
1648	16329(u)	0.055	0.038	battery dead- restarted for real time reading

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-10-2017	Shift: DAY 1 NIGHT	Weather: clear, smoky	Page: 1 of 2
Monitoring Personnel: Ryan Brauchle		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for clearing/grubbing and dropoff. Smoky weather continues to impact air quality. Due to clearing & grubbing activities near AM-4, The upwind monitor was placed north of AM4 @ the electrical panel. Note - low battery in dust monitors (new unit coming tomorrow)
Monitoring Equipment:	16329	27471	
Meter ID: ✓ TSI DustTrak DRX HANDHELD		TSI DustTrak DRX	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hr	24 hr	
Datalogger On/Off?:	on	on	
(Record meter readings starting on page 2)			



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel:	Date:	Page:
				Ryan Brauchly	08-10-2017	2 of 2
Time	Meter ID	Concentration		Comments		
		Real-Time	TWA			
0825	27471(d)	0.039	0.000	@ AM8		
0830	16329(u)	0.039	0.000	@ electrical panel - north of AM4		
0925	27471 (d)	0.026	0.005	6% battery		
0930	16329 (u)	0.027	0.004			
1037	27471 (d)	0.033	0.010	battery dead - restarted for realtime reading		
1043	16329 (u)	0.033	0.009			
1119	27471(d)	0.041	0.013	battery dead - restarted for realtime reading		
1123	16329(u)	0.034	0.011			
1220	27471(d)	0.062	0.019	battery dead - restarted for real time reading		
1223	16329(u)	0.047	0.016			
1320	27471(d)	0.055	0.021	battery dead - restarted for real time reading		
1323	16329(u)	0.035	0.023	battery dead - restarted for real time reading		
1420	27471(d)	0.042	0.027	" "		
1423	16329(u)	0.052	0.028	" "		
1520	27471(d)	0.059	0.035	" "		
1523	16329(u)	0.058	0.033	" "		

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

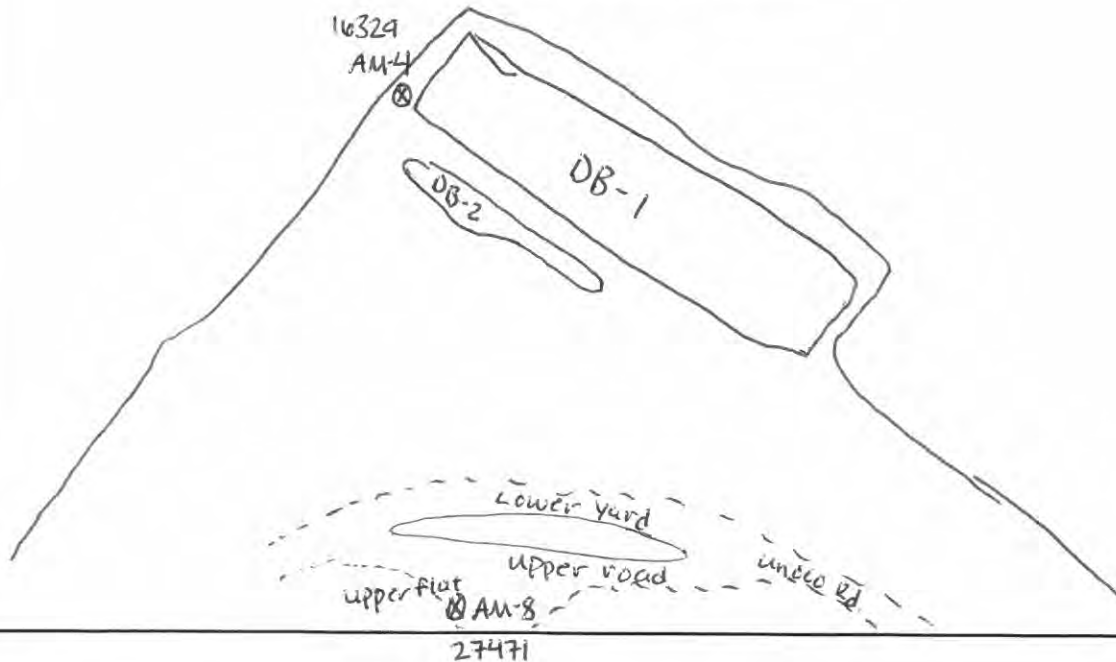
Date: 08-11-2017	Shift: DAY / NIGHT	Weather: Clear, Sunny, & Smoky	Page: 1 of 2
Monitoring Personnel: Eric Krueger		Prominent Wind Direction: N <u>NW</u> W SW S SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for some clearing & grubbing, mini excavation to install wheel wash. Smoky weather conditions continue to impact air quality, slightly
Monitoring Equipment:	16329	27471	
Meter ID:	Tsi DustTrak DRx	Tsi DustTrak DRx	
Particulate Size:	PM _{2.5} <u>PM₁₀</u>	PM _{2.5} <u>PM₁₀</u>	
Averaging Period:	24 hr.	24 hr.	
Datalogger On/Off?:	ON	ON	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

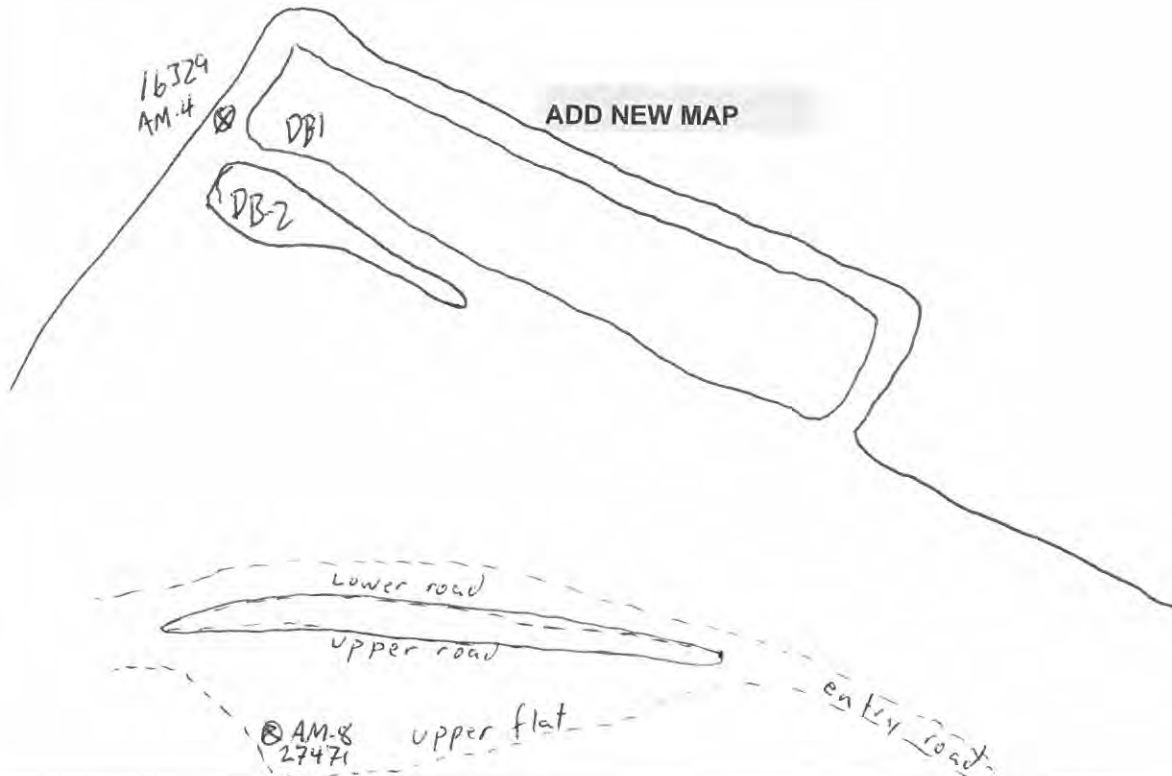
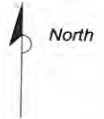
Meter Readings				Personnel: Eric Krueger	Date: 08-11-2017	Page: 2 of 2
Time	Meter ID	Concentration (ug/m³) mg/m ³			Comments	
		Real-Time	TWA			
0757	16329(u)	0.020	0.000		@ AM-4	
0800	27471(d)	0.020	0.000		@ AM-8	
0858	16329(u)	0.017	0.003			
0900	27471(d)	0.027	0.003			
0900	16329(u)	0.019	0.005			
1003	27471(d)	0.019	0.006			
1100	16329(u)	0.024	0.008			
1103	27471(d)	0.053	0.008			
1200	16329(u)	0.025	0.010			
1203	27471(d)	0.032	0.011			
1300	16329(u)	0.042	0.012		battery dead - restarted for a real time reading	
1302	27471(d)	0.040	0.013			
1410	16329(u)	0.036	0.015		battery dead - restarted for a real time reading	
1405	27471(d)	0.035	0.020			
1500	16329(u)	0.034	0.016		battery dead - restarted for a realtime reading	
1505	27471(d)	0.036	0.024			

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 08-14-2017	Shift: DAY / NIGHT	Weather: partly cloudy	Page: 1 of 2
Monitoring Personnel: Ryan Brauchler		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for wheel wash installation. Air quality has improved greatly over the weekend
Monitoring Equipment:	TSI DustTrak DRX HANDHELD	TSI	
Meter ID:	16329	27471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24hr	24 hr	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



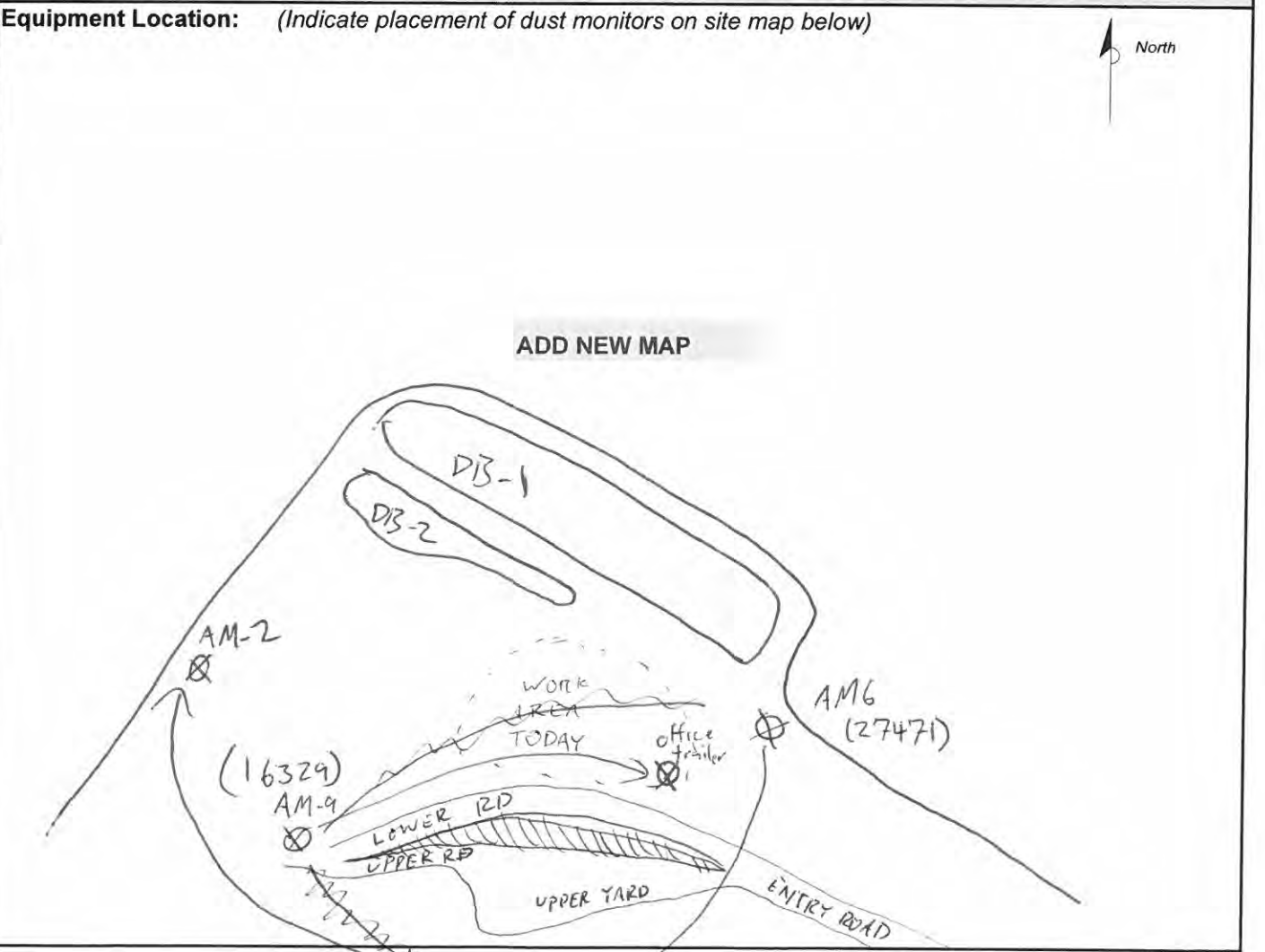
DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel: Ryan Brauchle	Date: 8-14-2017	Page: 2 of 2
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$)		Comments		
		Real-Time	TWA			
0720	27471(d)	0.017	0.000	@AM-8		
0722	16329(w)	0.021	0.000	@AM-4		
0822	27471(d)	0.016	0.002			
0825	16329(w)	0.014	0.002			
0916	27471(d)	0.011	0.003			
0921	16329(w)	0.012	0.004			
1019	27471(d)	0.011	0.005			
1023	16329(w)	0.012	0.005			
1123	27471(d)	0.013	0.006			
1125	16329(w)	0.012	0.007			
1238	24741(d)	0.010	0.008			
1245	16329(w)	0.012	0.009*	batteries dead - restarted for real time measurement		
1320	24741(d)	0.009	0.009			
1325	16329(w)	0.009	0.010*	batteries dead - restarted for real time data		
1417	24741(d)	0.009	0.010			
1423	16329(w)	0.008	0.012*	batteries dead - restarted for real time data		
1518	24741(d)	0.009	0.011			
1520	16329(w)	0.009	0.012*	batteries dead - restarted for real-time data		
1621	24741(d)	0.008	0.011			
1625	16329(w)	0.006	0.000*	batteries dead - restarted for real-time data		

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-15-2017	Shift: DAY / NIGHT	Weather: partly cloudy in morning, clearing in afternoon	Page: 1 of 2
Monitoring Personnel: Ryan Brauchler		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for backfill delivery and building a pad for the water treatment system behind the office trailer. Change in wind direction today ENE in morning WNW @ 10 AM. <hr/> New unit arrived @ 1345 to replace 16329
Monitoring Equipment:	TSI DUSTTrak DRX 44282000	TSI DustTrak DRX HANDHELD	
Meter ID:	27471	16329/27733	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, no save	on, no save	
(Record meter readings starting on page 2)			



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings	Personnel: <i>Ryan Brauchla</i>	Date: <i>08-15-2017</i>	Page: <i>2 of 2</i>
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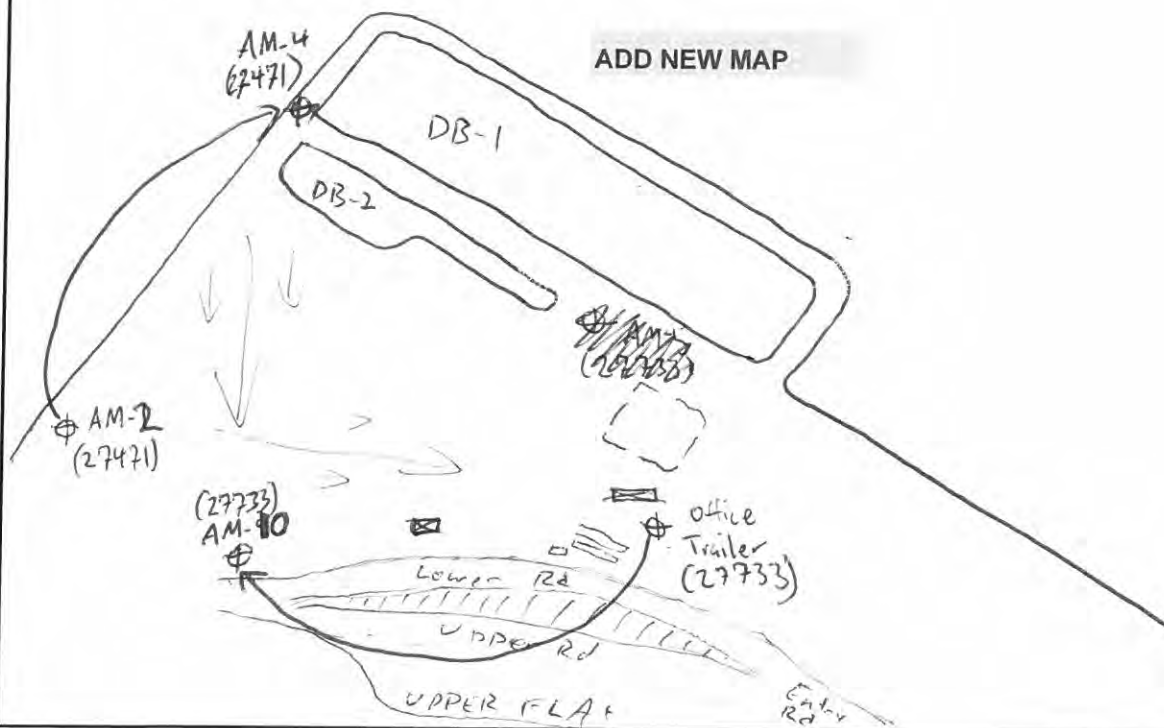
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$)		Comments
		Real-Time	TWA	
0802	16329 (d)	0.019	0.000	@ AM-9
0805	27471 (w)	0.019	0.000	@ AM-6
0900	16329 (d)	0.031	0.003	
0902	27471 (w)	0.016	0.002	
1005	16329 (d)	0.024	0.004	@ office trailer (wind direction changed to WNW)
1014	27471 (w)	0.014	0.004	@ AM-2 (wind direction changed to WNW)
1101	16329 (d)	0.017	0.010	
1103	27471 (w)	0.009	0.006	
1203	27471 (w)	0.008	0.007	
1205	16329 (d)	0.013	0.013	
1250	16329 (d)	0.017	0.013	battery < 5%
1300	27471 (w)	0.018	0.008	
1357	27471 (d)	0.009	0.009	
1404	27733 (w)	0.010	0.006*	unit replaced (resets TWA)
1500	27733 (w)	0.014	0.001	
1502	27471 (d)	0.004	0.009	
1600	16329 27471 (d)	0.002	0.001	
1601	27733 (w)	0.003	0.010	
1701	27471 (d)	0.004	0.010	
1712	27733 (w)	0.002	0.002	

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-16-2017	Shift: DAY / NIGHT	Weather: clear & sunny in AM, cloudy in PM	Page: 1 of 2
Monitoring Personnel: Ryan Brauchle		Prominent Wind Direction: N NW ^{AM} W SW S SE E ^{PM} NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust Monitoring for backfill delivery and construction. New unit arrived yesterday. changed sampling locations at noon. Moved upwind from AM-2 to AM-4 Moved downwind from office trailer to AM-10
Monitoring Equipment:	TSI DustTrack DRX	TSI DustTrack DRX	
Meter ID:	27471	27733 ←	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on / no save	on / no save	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



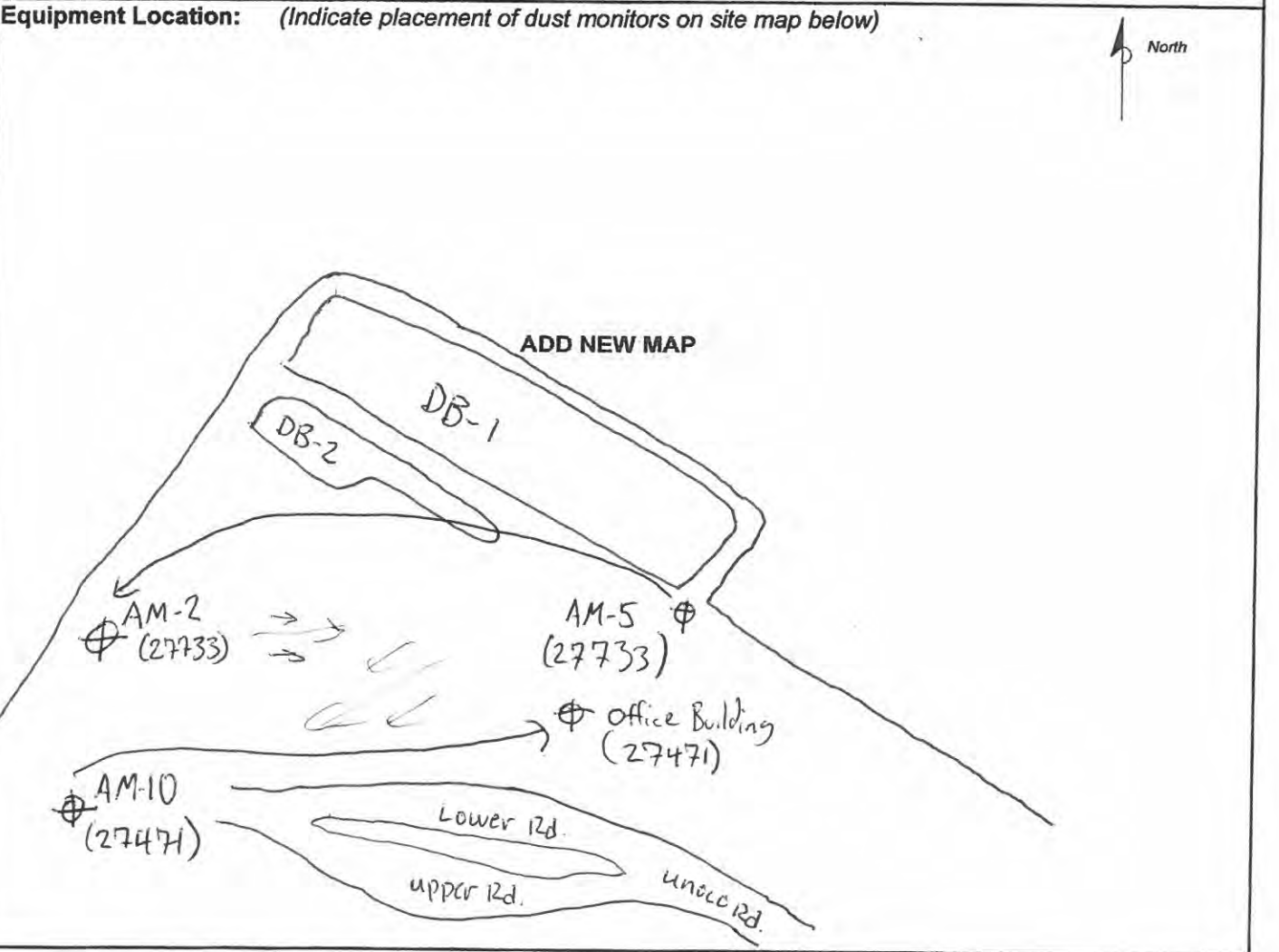
DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel: Ryan Brauchla	Date: 08-16-2017	Page: 2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA			
0820	27471(w)	0.012	0.000	@ AM-2		
0827	27733(d)	0.008	0.000	@ office trailer		
0934	27471(w)	0.009	0.002			
0930	27733(d)	0.004	0.004			
1043	27471(w) 27733(d)	0.008	0.003			
1040	27733(d)	0.006	0.005			
1138	27471(w) 27733(d)	0.009	0.004			
1148	27733(d)	0.005	0.006			
1223	27471(w)	0.010	0.005	@ AM-4 (wind-direction change)		
1227	27733(d)	0.003	0.007	@ AM-10 (wind-direction change)		
1335	27471(w)	0.010	0.007			
1331	27733(d)	0.003	0.007			
1439	27471(w)	0.010	0.008			
1434	27733(d)	0.073	0.008	- concurrent with dropoff of backfill load (0.007@1435)		
1525	27733(d)	0.005	0.008			
1530	27471(w)	0.008	0.009			
1621	27733(d)	0.006	0.009			
1626	27471(w)	0.009	0.010			

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 08-17-2017	Shift: DAY / NIGHT	Weather: Clear & Sunny	Page: 1 of 2
Monitoring Personnel: Eric Krueger / Ryan Braudha		Prominent Wind Direction: N NW <u>W</u> SW S SE <u>E</u> <u>NE</u>	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for dewatering activities, filling bulk bags, setting up water treatment, backfill dropoff
Monitoring Equipment:	Tsl Dust Trak DRX	Tsl Dust Trak DRX	
Meter ID:	27733	27471	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	
Averaging Period:	24 hrs	24 hrs.	
Datalogger On/Off?:	ON	ON	
(Record meter readings starting on page 2)			



DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

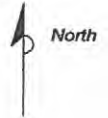
Meter Readings				Personnel: Ryan Brauchk Eric Krutger	Date: 08-17-2017	Page: 2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA			
0900	27471 (D)	0.012	0.000	@ AM-10		
0906	27733 (W)	0.009	0.000	@ AM-5		
1000	27471 (D)	0.135	0.002	- truck sped by at <5mph - told ^{Eric &} Ricardo to remind drivers and suggested to S. Miles that we put down some water		
1001	27733 (W)	0.002	0.000			
1100	27471 (D)	0.012	0.003			
1103	27733 (W)	0.004	0.001			
1238	27471 (D)	0.008	0.006			
1234	27733 (W)	0.003	0.001			
1330	27471 (D)	0.007	0.007	@ office trailer (moved @1300 for W wind)		
1333	27733 (W)	0.003	0.002	@ AM-2 (moved @1300 for W wind)		
1434	27471 (D)	0.006	0.010			
1428	27733 (W)	0.002	0.002			
1526	27471 (D)	0.015	0.011			
1530	27733 (W)	0.002	0.002			

DUST MONITORING FIELD LOG

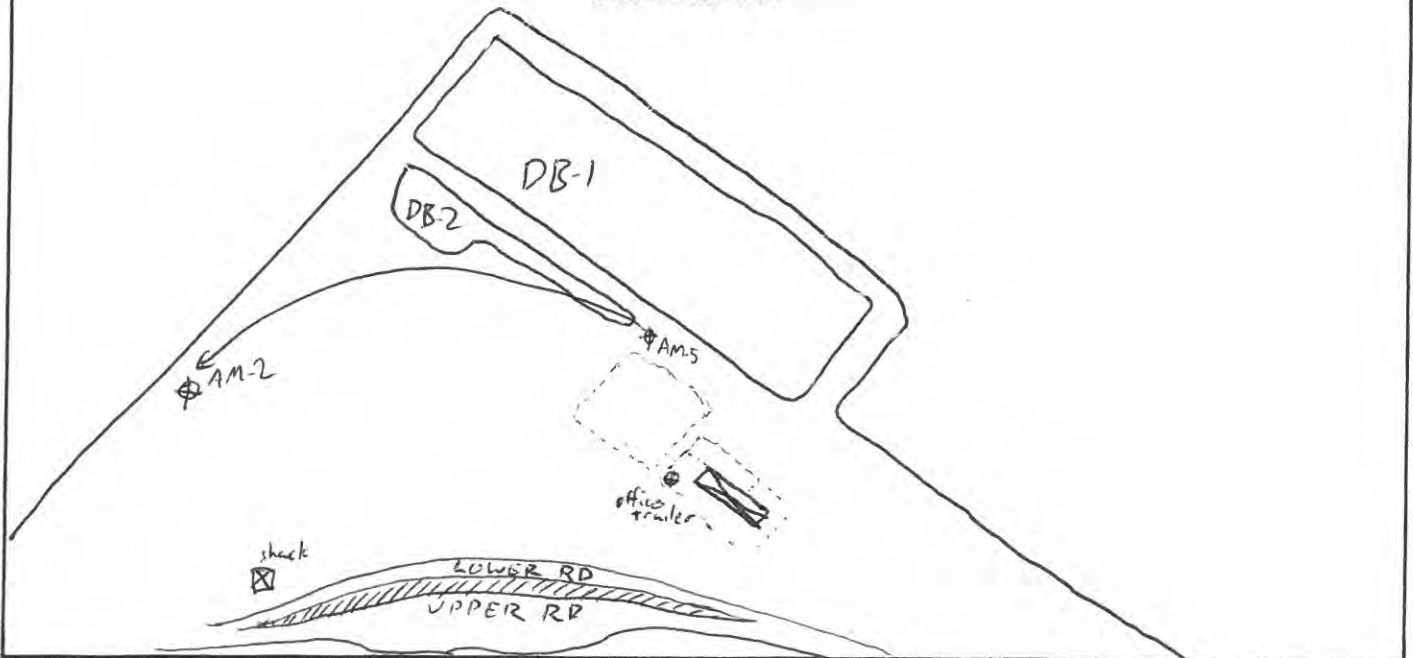
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-18-2017	Shift: <u>DAY</u> / NIGHT	Weather: cloudy & calm in AM;	Page: 1 of 2
Monitoring Personnel: Ryan Brauchler		Prominent Wind Direction: N NW ^{after 1000} SW S SE E NE	Wind Speed: calm-AM LIGHT MODERATE STRONG
Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for sandbag filling and TWTS setup
Monitoring Equipment:	TSE DustTrak DRX	TSE DustTrak DRX	
Meter ID:	27471	27733	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	On, no save	On, no save	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP



DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

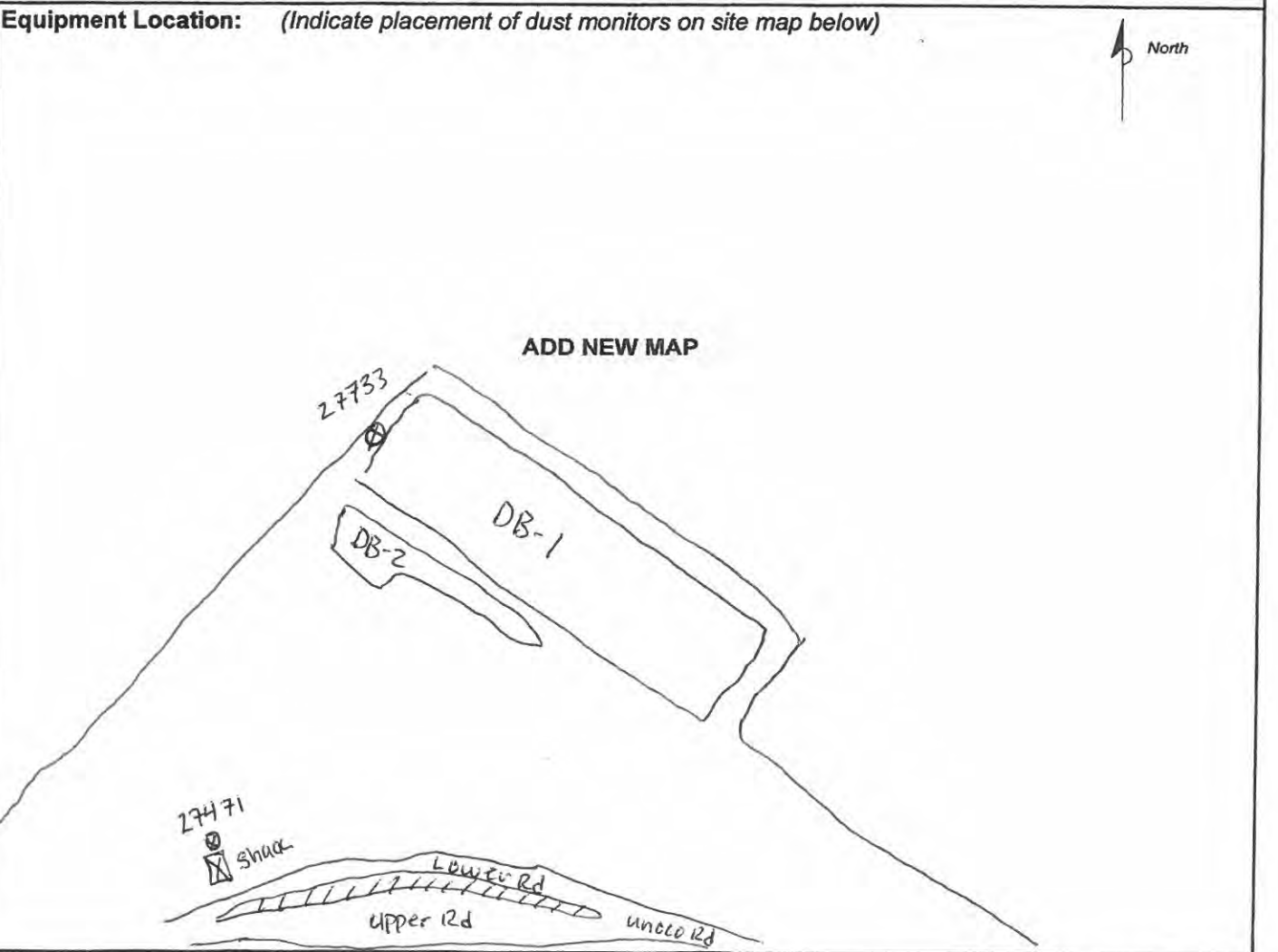
Meter Readings				Personnel: Ryan Bravchla	Date: 08-16-2017	Page: 2 of 2
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$)		Comments		
		Real-Time	TWA			
0730	27471	0.007	0.000	@ AM-5		
0730	27733	0.003	0.000	@ office trailer		
0830	27471	0.008	0.001			
0830	27733	0.003	0.001			
0950	27471	0.008	0.002			
0950	27733	0.003	0.004			
1030	27471(w)	0.006	0.003	light west wind - moved monitor up wind to AM-2		
1030	27733(w)	0.003	0.009			
1125	27471(w)	0.005	0.004			
1130	27733(w)	0.008	0.012			
1231	27471(w)	0.010	0.005			
1227	27733(w)	0.007	0.013			
1333	27471(w)	0.009	0.006			
1336	27733(w)	0.006	0.014			
1433	27471(w)	0.011	0.007			
1436	27733(w)	0.013	0.014			
1540	27471(w)	0.012	0.009			
1537	27733(w)	0.006	0.015			
1620	27471(w)	0.012	0.009			
1627	27733(w)	0.007	0.015			

DUST MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-21-2017	Shift: DAY / NIGHT	Weather: Overcast	Page: 1 of 2
Monitoring Personnel: Eric Krueger, Alex Pink		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for beam construction, Secondary containment building activities & TWTS setup. Both dust monitors calibrated before use.
Monitoring Equipment:	TSI Dust Trak DRX	TSI Dust Trak DRX	
Meter ID:	27733	27471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs.	24 hrs.	
Datalogger On/Off?:	ON	ON	
(Record meter readings starting on page 2)			



DUST MONITORING FIELD LOG

Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

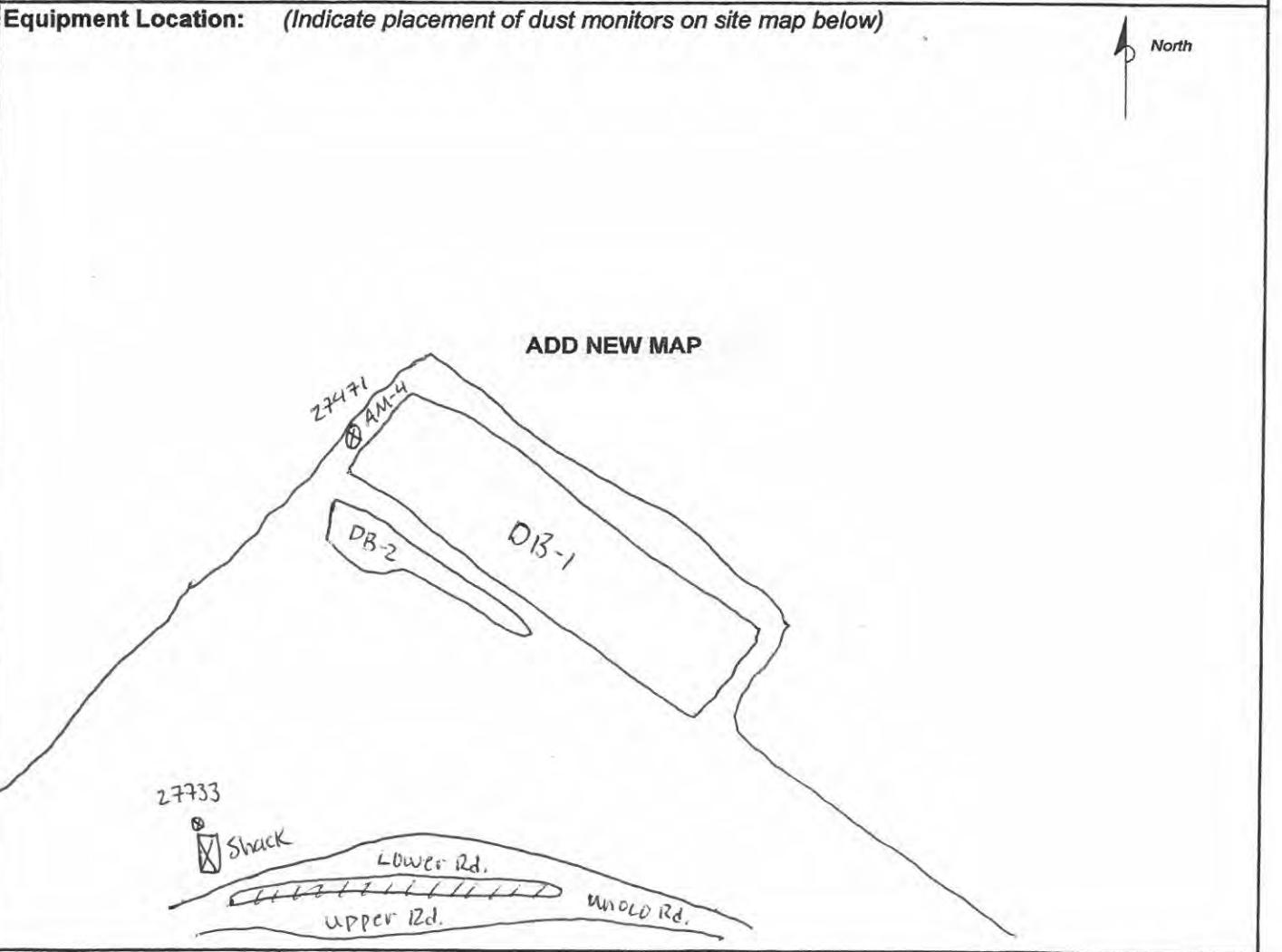
Meter Readings				Personnel: Eric Krueger, Alex Pink	Date: 08-21-2017	Page: 2 of 2
Time	Meter ID	Concentration (ug/m³) mg/m ³		Comments		
		Real-Time	TWA			
0837	27471(d)	0.010	0.000	© Shack		
0840	27733(u)	0.007	0.000	© AM-4		
0937	27471(d)	0.007	0.002			
0940	27733(w)	0.007	0.001			
1037	27471(d)	0.007	0.003			
1040	27733(w)	0.003	0.001			
1137	27471(d)	0.005	0.004			
1140	27733(u)	0.001	0.001			
1237	27471(d)	0.005	0.005			
1240	27733(w)	0.001	0.001			
1337	27471(d)	0.005	0.005			
1340	27733(u)	0.001	0.002			
1437	27471(d)	0.010	0.007			
1440	27733(w)	0.002	0.002			
1537	27471(d)	0.007	0.008			
1540	27733(u)	0.003	0.002			
1637	27471(d)	0.017	0.011			
1640	27733(u)	0.007	0.003			

DUST MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-22-2017	Shift: DAY / NIGHT	Weather: clear & Sunny	Page: 1 of 2
Monitoring Personnel: Eric Koueger, Ryan Brauchta		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for fusing pipes for bypass, construction of secondary containment around/for contaminated soil stockpile. * Both meters zero calibrated using a zero filter before use.
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	27471	27733	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	ON	ON	
(Record meter readings starting on page 2)			



DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

Meter Readings			Personnel:	Date:	Page:
			Eric Krueser	08-22-2017	2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments	
		Real-Time	TWA		
1000	27733(d)	0.003	0.000	@ Shack	
1005	27471(u)	0.006	0.000	@ AM-4	
1100	27733 27733(d)	0.004	0.001		
1105	27471(u)	0.012	0.001		
1200	27733(d)	0.005	0.001		
1205	27471(u)	0.004	0.001		
1300	27733(d)	0.008	0.002		
1305	27471(u)	0.005	0.002		
1400	27733(d)	0.006	0.002		
1405	27471(u)	0.003	0.002		
1500	27733(d)	0.013	0.003		
1505	27471(u)	0.012	0.003		
1600	27733(d)	0.018	0.004		
1605	27471(u)	0.004	0.004		

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

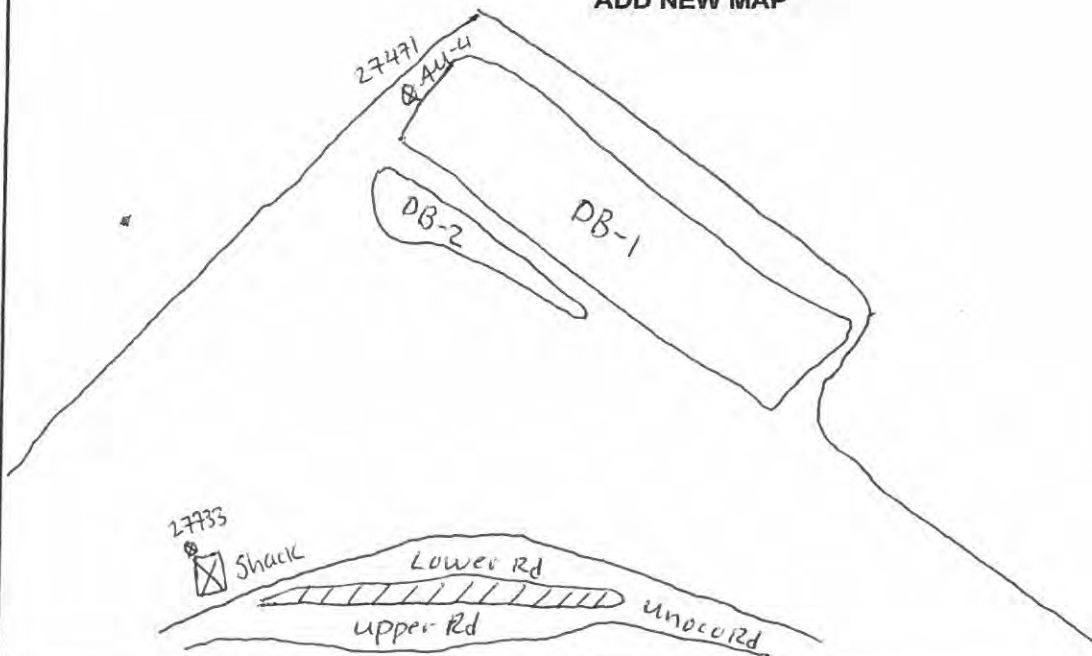
Date: 08-23-2017	Shift: DAY / NIGHT	Weather: Sunny & partly cloudy	Page: 1 of 2
Monitoring Personnel: Eric Krueger		Prominent Wind Direction: N NW W <u>SW</u> S SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for haul road construction, fusing pipe, Secondary containment for soil stockpile area & berm construction in creek. * Both meters zero calibrated using a zero filter before use.
Monitoring Equipment:	Tsi DustTrak DRX	Tsi DustTrak DRX	
Meter ID:	27733	27471	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	
Averaging Period:	24 hrs.	24 hrs.	
Datalogger On/Off?:	ON	ON	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP



DUST MONITORING FIELD LOG

Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

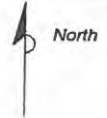
Meter Readings				Personnel: <i>Eric Krueger</i>	Date: <i>08-23-2007</i>	Page: <i>2</i> of <i>2</i>
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$) (Mg/m^3)		Comments		
		Real-Time	TWA			
<i>0800</i>	<i>27733(d)</i>	<i>0.003</i>	<i>0.000</i>	<i>@ Shack</i>		
<i>0804</i>	<i>27471(u)</i>	<i>0.003</i>	<i>0.000</i>	<i>@ AM-4</i>		
<i>0900</i>	<i>27733(d)</i>	<i>0.006</i>	<i>0.000</i>			
<i>0904</i>	<i>27471(u)</i>	<i>0.008</i>	<i>0.001</i>			
<i>1000</i>	<i>27733(d)</i>	<i>0.004</i>	<i>0.001</i>			
<i>1005</i>	<i>27471(u)</i>	<i>0.007</i>	<i>0.002</i>			
<i>1100</i>	<i>27733(d)</i>	<i>0.008</i>	<i>0.002</i>			
<i>1105</i>	<i>27471(u)</i>	<i>0.011</i>	<i>0.003</i>			
<i>1200</i>	<i>27733(d)</i>	<i>0.008</i>	<i>0.003</i>			
<i>1205</i>	<i>27471(u)</i>	<i>0.010</i>	<i>0.004</i>			
<i>1300</i>	<i>27733(d)</i>	<i>0.005</i>	<i>0.005</i>			
<i>1305</i>	<i>27471(u)</i>	<i>0.009</i>	<i>0.007</i>			
<i>1400</i>	<i>27733(d)</i>	<i>0.004</i>	<i>0.005</i>			
<i>1405</i>	<i>27471(u)</i>	<i>0.007</i>	<i>0.008</i>			
<i>1500</i>	<i>27733(d)</i>	<i>0.005</i>	<i>0.006</i>			
<i>1504</i>	<i>27471(u)</i>	<i>0.008</i>	<i>0.009</i>			
<i>1555</i>	<i>27733(d)</i>	<i>0.016</i>	<i>0.006</i>			
<i>1551</i>	<i>27471(u)</i>	<i>0.006</i>	<i>0.004</i>			

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

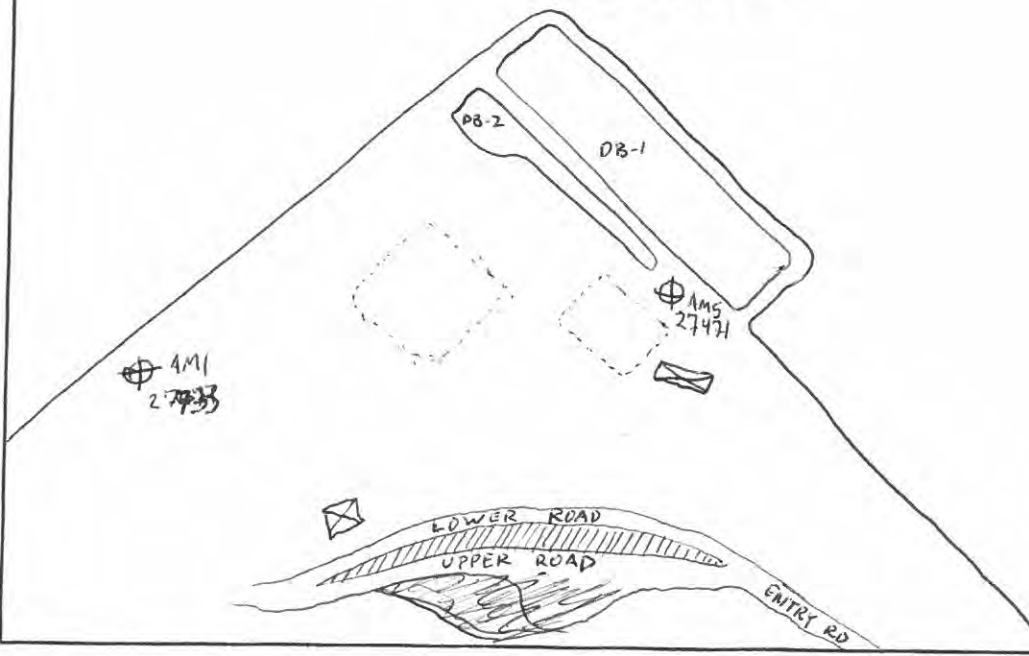
Date: 08-24-2017	Shift: DAY / NIGHT	Weather: mostly cloudy	Page: 1 of 2
Monitoring Personnel: Ryan Brauchla		Prominent Wind Direction: N NW <u>W</u> SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for haul road construction, Willow creek Berm construction, culvert placement. * Dust monitors calibrated with zero filter
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	27733	27471	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings			Personnel:	Date:	Page:
			Ryan Brauchle	08-24-2017	2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments	
		Real-Time	TWA		
0804	27733 (v)	0.008	0.000	@ AM-1	
0811	27471 (d)	0.007	0.000	@ AM-5	
0915	27733 (v)	0.012	0.001		
0922	27471 (d)	0.005	0.001		
1003	27733 (v)	0.002	0.001		
1009	27471 (d)	0.014	0.002		
1118	27733 (v)	0.003	0.001		
1122	27471 (d)	0.005	0.003		
1202	27733 (v)	0.002	0.001		
1207	27471 (d)	0.005	0.003		
1300	27733 (v)	0.003	0.002		
1305	27471 (d)	0.005	0.004		
1401	27733 (v)	0.002	0.002		
1416	27471 (d)	0.005	0.004		
1502	27733 (v)	0.003	0.002		
1506	2747A (d)	0.004	0.005		
1600	27733 (v)	0.003	0.003		
1602	27471 (d)	0.004	0.005		

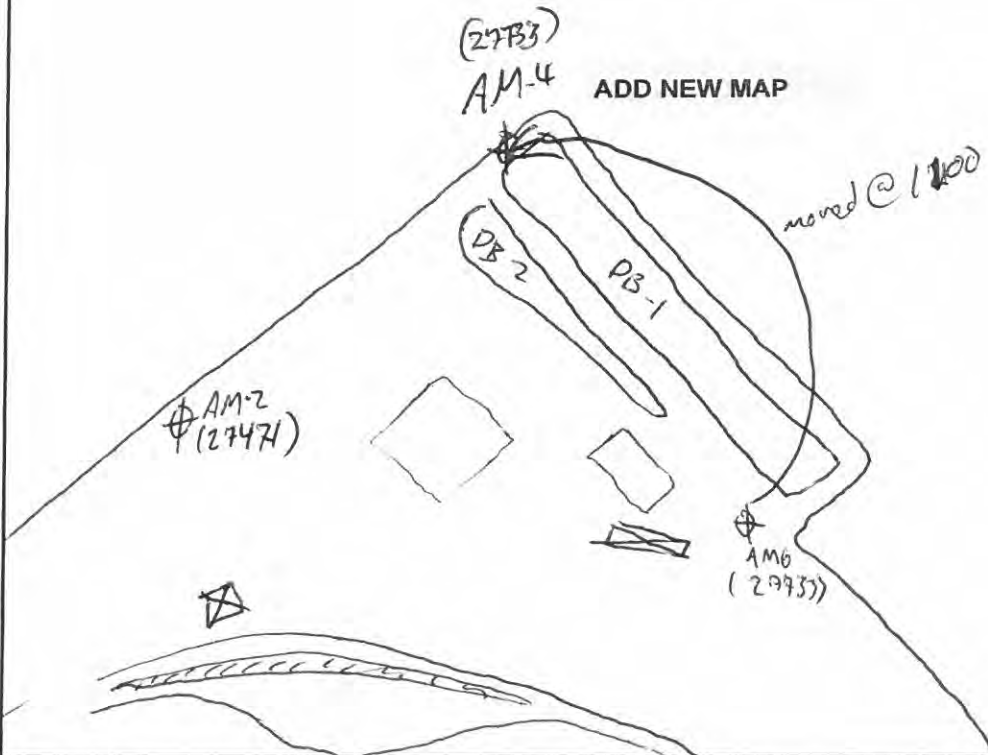
DUST MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-25-2017	Shift: <u>DAY</u> 1 NIGHT	Weather: mostly clear	Page: 1 of 2
Monitoring Personnel: Ryan Brauchka		Prominent Wind Direction: N NW W SW S SE <u>E</u> <u>NE</u>	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes:
Monitoring Equipment:	27733 *	27471	Dust monitoring for the Willow Creek Pipe/culvert/
Meter ID:	IST DustTrak ^{DRX}	SE Dusttrak DRX	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	* Dust monitors calibrated with zero filter
Averaging Period:	24 hr	24 hr	* Spot measurements only - battery very low & charger damaged
Datalogger On/Off?:	on, no save	on, no save	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

Meter Readings		Personnel: Ryan Brauchla	Date: 08-25-2017	Page: 2 of 2
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Time	Meter ID	Concentration (ug/m ³)		Comments
		Real-Time	TWA	
0807	27733(w)*	0.015	0.000	* spot measurement (battery not charged) @ AM-6
0817	27471(d)	0.007	0.000	@ AM-2
0905	27733(w)*	0.008	0.000	* " " " " " AM-6
0910	27471(d)	0.007	0.001	AM-2
1135	27733(w)	0.003	0.000	unit changed & relocated to AM-4 to capture NE wind
1140	27471(d)	0.003	0.003	AM-2
1233	27733(w)	0.002	0.000	AM-4
1236	27471(d)	0.004	0.003	AM-2
1340	27733(w)	0.002	0.001	AM-4
1343	27471(d)	0.003	0.004	AM-2
1443	27733(w)	0.003	0.001	AM-4
1445	27471(d)	0.004	0.004	AM-2
1557	27733(w)	0.006	0.001	AM-4
1559	27471(d)	0.002	0.005	AM-2

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

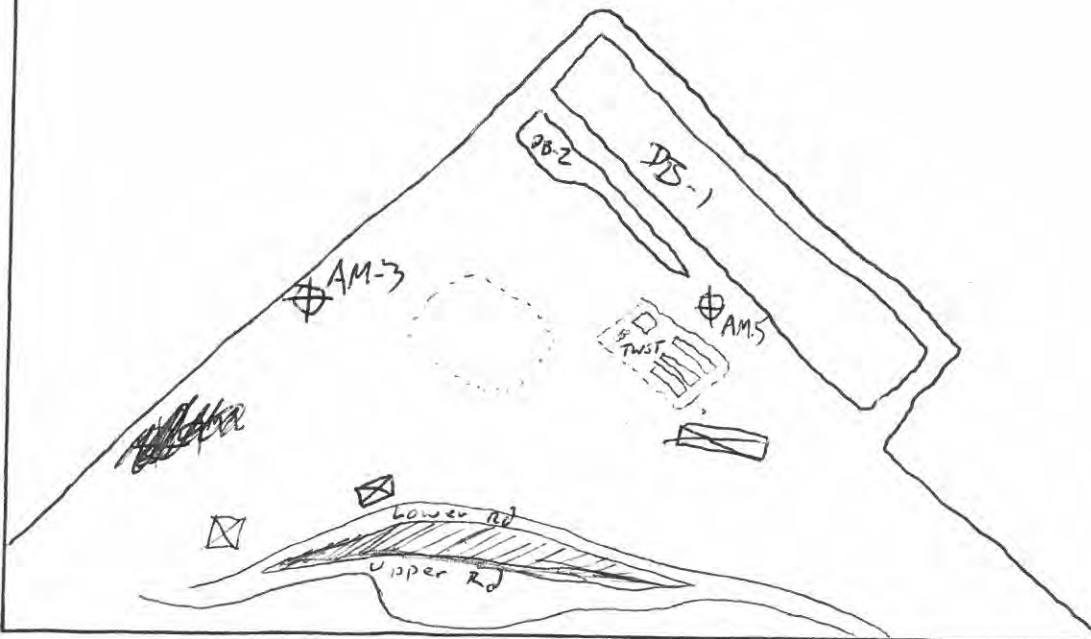
Date: 08-28-2017	Shift: DAY 1 NIGHT	Weather: sunny & clear	Page: 1 of 2
Monitoring Personnel: Ryan Brauchle		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for berm building, jersey barrier placement, grading haul roads. *Dust monitors calibrated at start of shift using the zero filters.
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	27471	22733	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP



DUST MONITORING FIELD LOG

Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

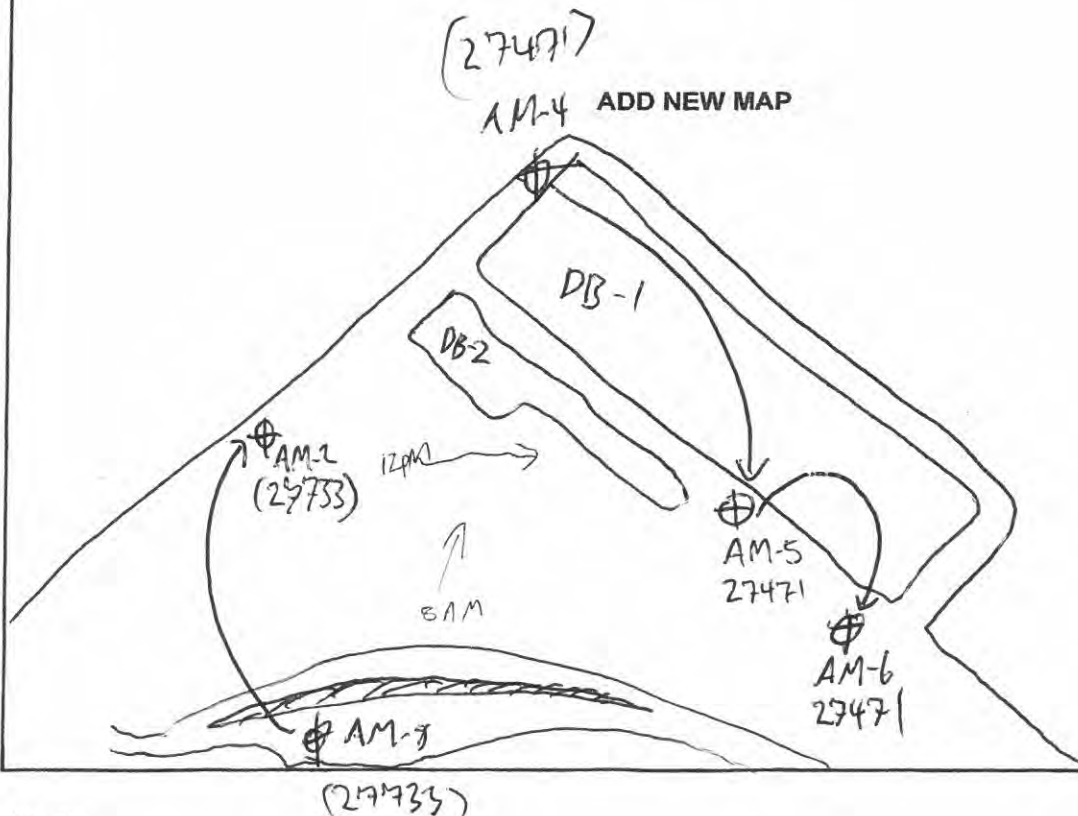
Meter Readings			Personnel:	Date:	Page:
			Ryan Brauchle	08-28-2017	2 of 2
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$)		Comments	
		Real-Time	TWA		
0805	27471 (v)	0.010	0.000	@ AM-5	
0810	27733 (d)	0.007	0.000	@ AM-3	
0900	27471 (v)	0.014	0.001		
0905	27733 (d)	0.008	0.001		
1001	27471 (v)	0.014	0.003		
1004	27733 (d)	0.006	0.002		
1129	27471 (v)	0.012	0.006		
1132	27733 (d)	0.004	0.003		
1217	27471 (v)	0.016	0.007		
1219	27733 (d)	0.007	0.004		
1404	27471 (v)	0.007	0.010		
1409	27733 (d)	0.005	0.005		
1511	27471 (v)	0.011	0.011		
1516	27733 (d)	0.006	0.006		
1604	27471 (v)	0.011	0.012		
1608	27733 (d)	0.005	0.009		

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 08-29-2017	Shift: DAY 1 NIGHT	Weather: clear & calm with smoke	Page: 1 of 2
Monitoring Personnel: Ryan Brauchle		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust Monitoring for jersey barrier installation. Elevated background particulate levels due to smoke * Dust Trak units calibrated using zero filter
Monitoring Equipment:	TSE DustTrak DRX	TSE DustTrak DRX	
Meter ID:	27733	27471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24hr	24hr	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel:	Date:	Page:
				Ryan Brauchle	08-29-2017	2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA			
0815	27733(w)	0.035	0.002	@AM-8 (smoky)		
0825	27471(d)	0.072	0.000	@AM-4 (smoky, but with noticeable dust as well)		
0900	27733(w)	0.033	0.005			
0901	27471(d)	0.059	0.006			
1007	27733(w)	0.042	0.010			
1002	27471(d)	0.077	0.016			
1103	27733(w)	0.038	0.015			
1100	27471(d)	0.108	0.025			
1201	27733(w)	0.048	0.020	@AM-2 (moved due to change in wind direction S→W)		
1204	27471(d)	0.092	0.037	@AM-5 (" " " " ")		
1305	27733(w)	0.035	0.025			
1309	27471(d)	0.067	0.047			
1400	27733(w)	0.029	0.029			
1400	27471(d)	0.060	0.054	↳ Action level reached - Extract begins dust suppression activities ^{no dust suppression per S. Miles - see note}		
1508	27733(w)	0.028	0.033			
1512	27471(d)	0.062	0.063			
1539	27471(d)	0.060	0.060	Note: Per S. Miles, dust suppression will not be necessary		
1616	27733(w)	0.030	0.036	Placement of the downwind dust monitor, coupled		
1620	27471(d)	0.061	0.072	with wind direction, led to inflated readings.		
1700	27733(w)	0.017	0.036	If the monitor had been placed further		
1704	27471(d)	0.038	0.072	downwind (north of DB-1 or Edmonds Marsh), action levels would not have been reached. Per S. Miles, downwind dust monitor was moved to AM-6.		

DUST MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

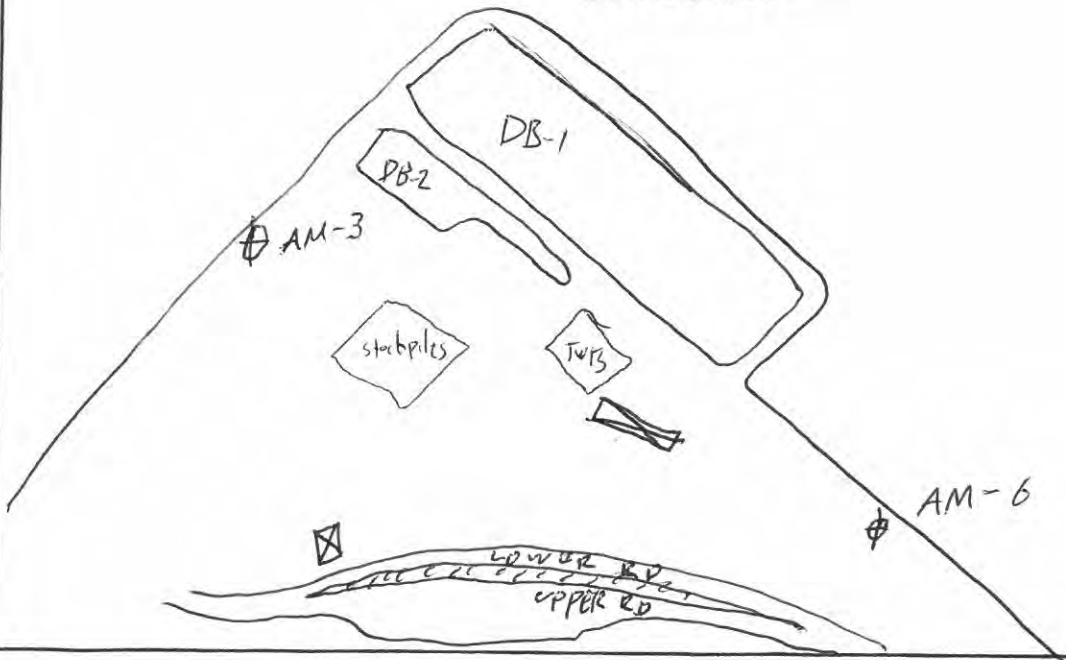
Date: 8/30/17	Shift: <u>DAY</u> 1 NIGHT	Weather: AM misty rain	Page: 1 of 2
Monitoring Personnel: A. Pink & R. Brauchla		Prominent Wind Direction: N NW ^{AM} W SW S SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for excavation and berm construction monitors calibrated using zero cal filter
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	027733	027471	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP



DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 8/31/17	Shift: DAY / NIGHT	Weather: AM - cloudy, calm, mist PM sunny, breezy	Page: 1 of 2
Monitoring Personnel: A. Pink		Prominent Wind Direction: AM N NW ^{PM} W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

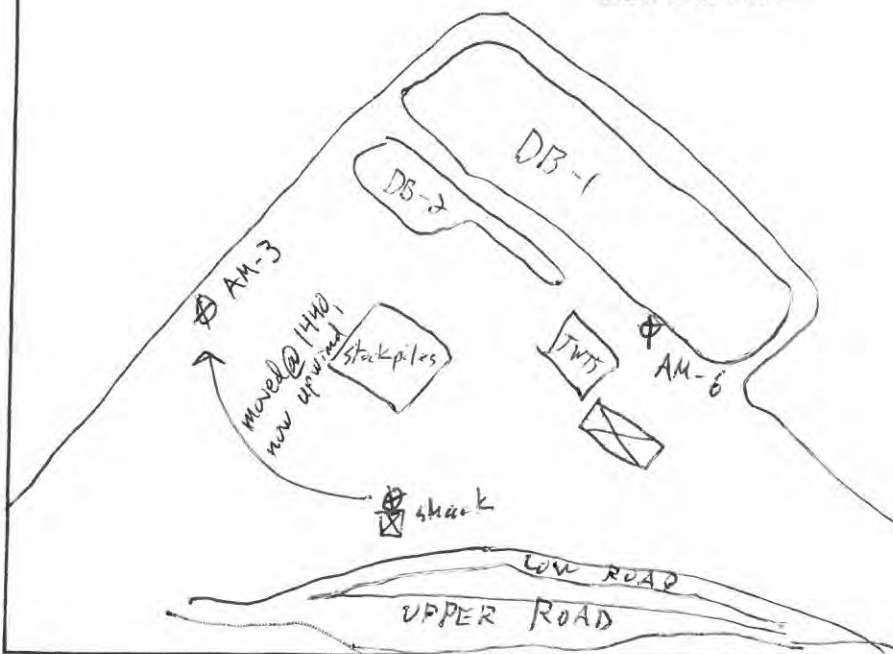
Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for berm excavation monitors calibrated using Zero cal filter
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	027233	027471	
Particulate Size:	(PM _{2.5}) PM ₁₀	(PM _{2.5}) PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP

⊕ location of dust monitors



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel:	Date:	Page:
				A. Pink	3/31/17	2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA			
0846	027733(u)	0.002	0.000	@ AM-6		
0850	027471(s)	0.003	0.000	@ shack		
0921	027471(u)	0.005	0.000			
0937	027733(u)	0.002	0.000			
1021	027471(u)	0.003	0.001			
1029	027733(u)	0.001	0.000			
1152	027471(u)	0.003	0.001			
1158	027733(u)	0.001	0.001			
1309	027471(u)	0.002	0.002			
1319	027733(u)	0.001	0.001			
1411	027471(u)	0.004	0.003			
1419	027733(u)	0.001	0.001			
1506	027471(u)	0.003	0.003	@ AM-3, now upwind		
1510	027733(u)	0.001	0.001	@ AM-6, now downwind		
1619	027471(u)	0.004	0.004			
1623	027733(u)	0.001	0.001			

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

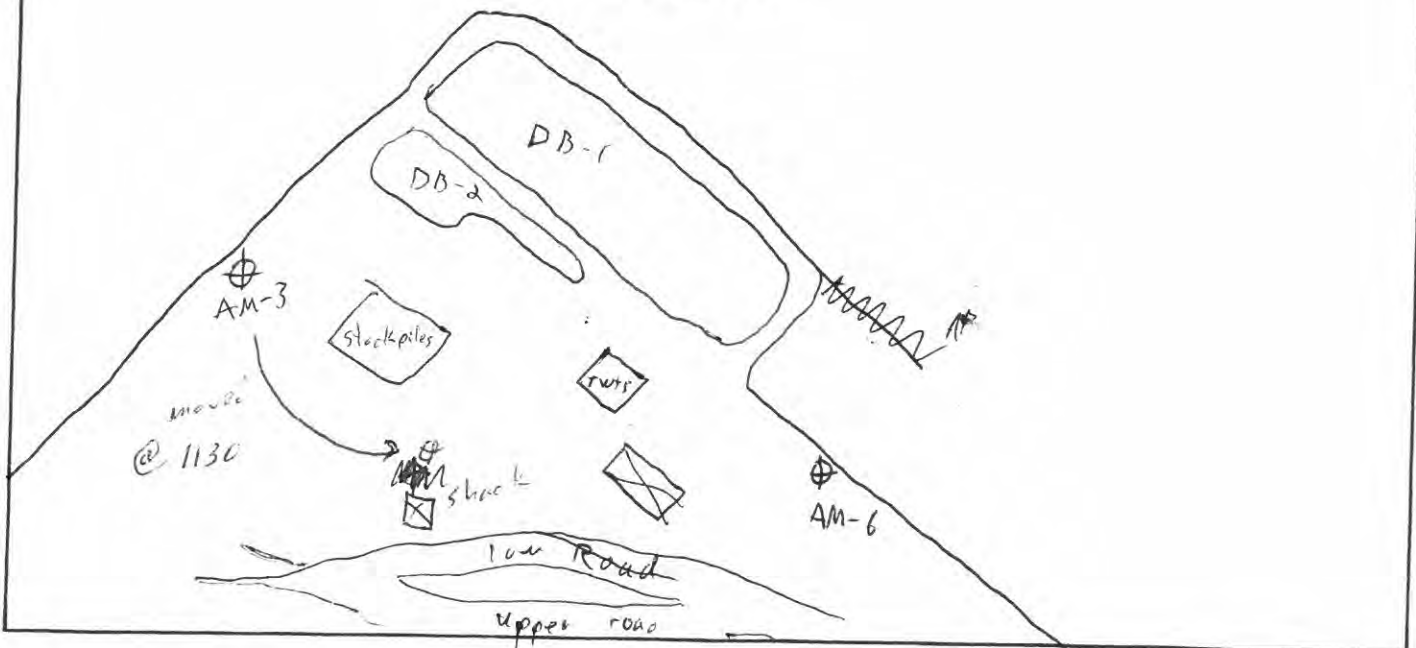
Date: 9/1/17	Shift: DAY 1 NIGHT	Weather: Sunny, calm	Page: 1 of 2
Monitoring Personnel: A. Pink		Prominent Wind Direction: N NW W SW S SE <u>E</u> NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: dust monitoring for excavation of NW corner dust monitors calibrated using zero cal filters
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	027471	027733	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP



DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

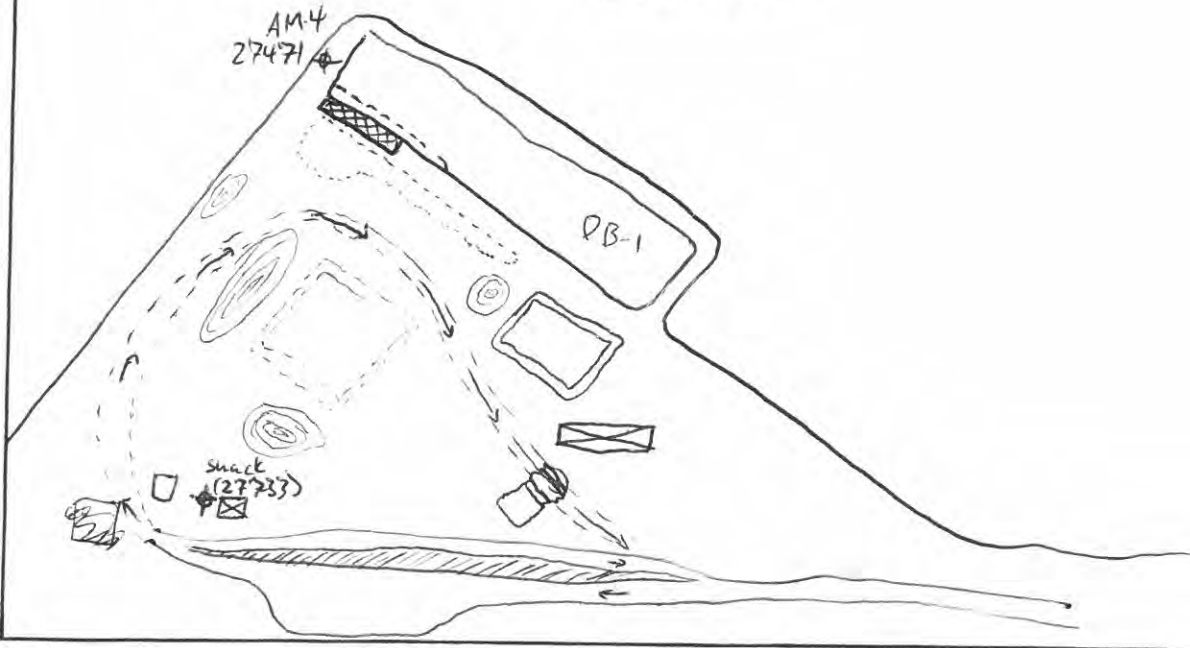
Date: 09-05-2017	Shift: <u>DAY</u> / NIGHT	Weather: AM-high smoke	Page: 1 of 2
Monitoring Personnel: Ryan Brauchle		Prominent Wind Direction: <u>N</u> NW W SW S SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust Monitoring for DB-2 pump out, fuel delivery, excavator run delivery No excavation or soil moving to day - just monitoring only
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	27471	27733	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



ADD NEW MAP



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

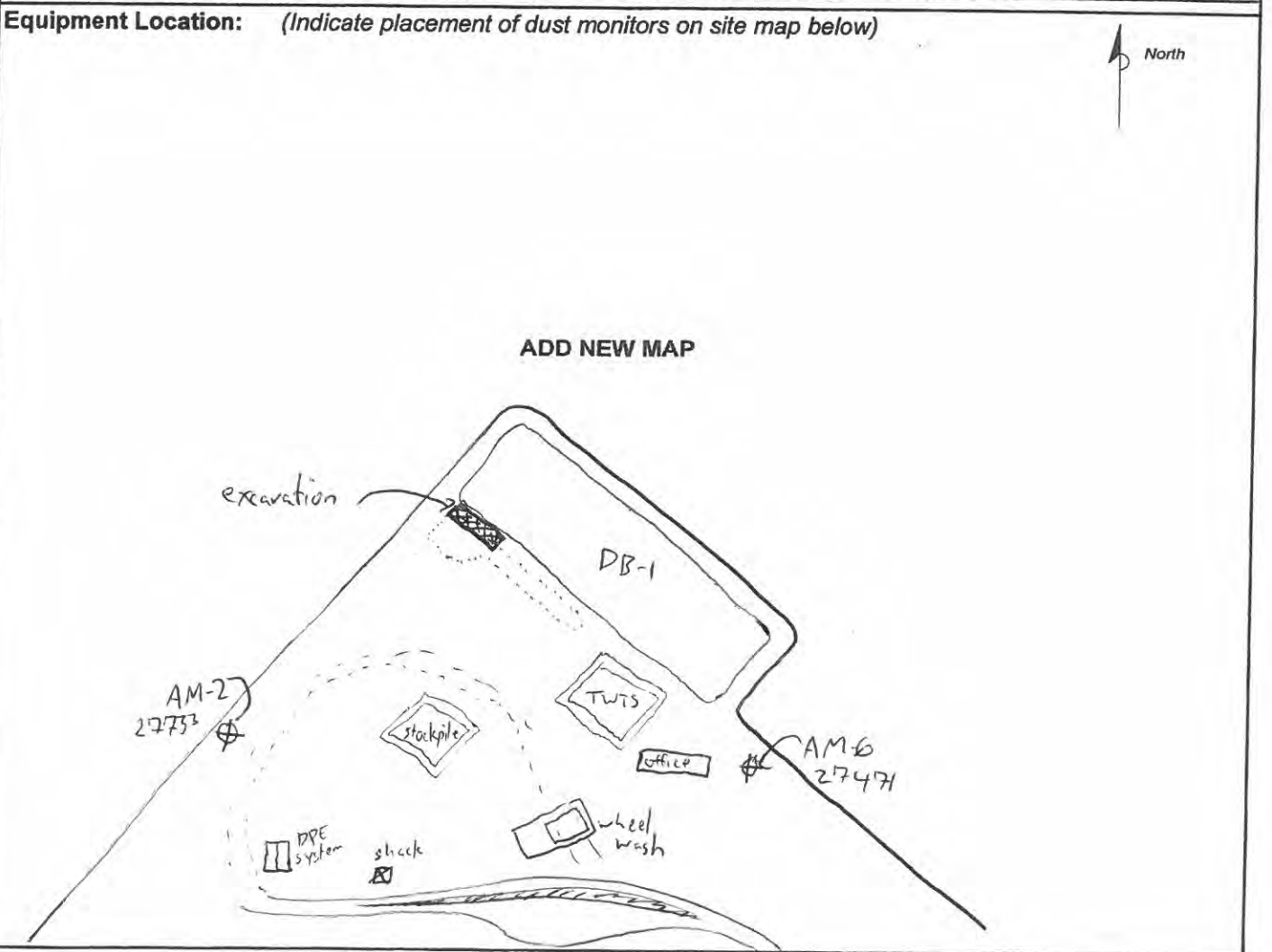
Date: 09-06-2017	Shift: DAY / NIGHT	Weather: smoke	Page: 1 of 2
Monitoring Personnel: Ryan Brauchle		Prominent Wind Direction: N NW W SW S SE (E) NE	Wind Speed: (LIGHT) MODERATE STRONG

Meter Location:	Upwind	Downwind
Monitoring Equipment:	27471	27733
Meter ID:	TSE Dust Trak DRX	TSE Dust Trak DRX
Particulate Size:	(PM _{2.5}) PM ₁₀	(PM _{2.5}) PM ₁₀
Averaging Period:	24 hrs	24 hrs
Datalogger On/Off?:	on, not saved	on, not saved

(Record meter readings starting on page 2)

Construction Summary/Notes:
 Excavation continues on the berm between DB-1 & DB-2 travelling ~~west~~ southeast. Dust monitoring chiefly for excavation activities

* Dust monitors calibrated using zero filter

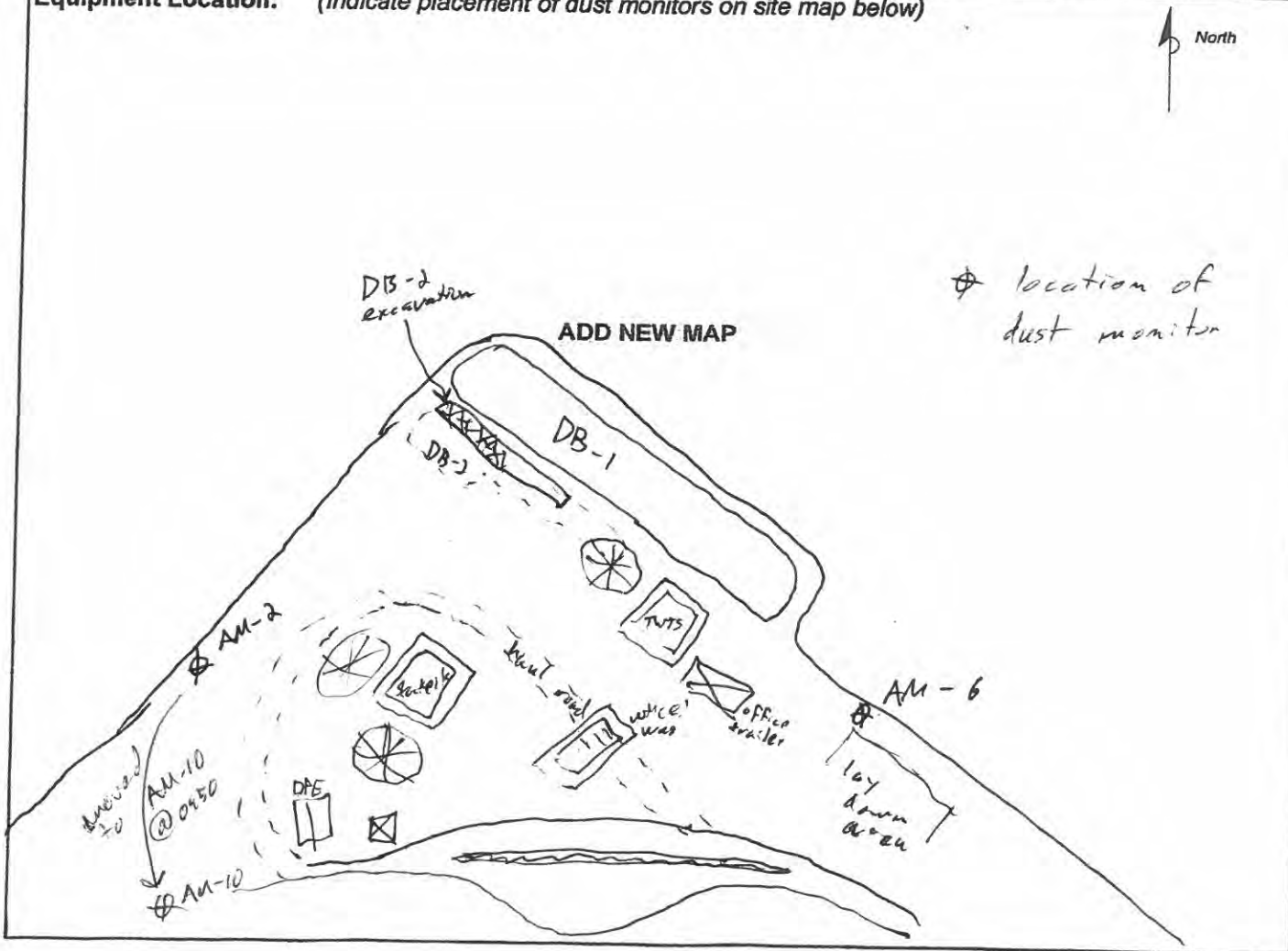


DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 9/8/17	Shift: DAY 1 NIGHT	Weather: overcast - wild fire smoke haze	Page: 1 of 2
Monitoring Personnel: Alex Pink		Prominent Wind Direction: AM N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust monitoring for DB-2 excavation and load-out
Monitoring Equipment:	027733	027471	
Meter ID:	TSI DustTrak DRX	TSI DustTrak DRX	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs.	24 hrs.	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

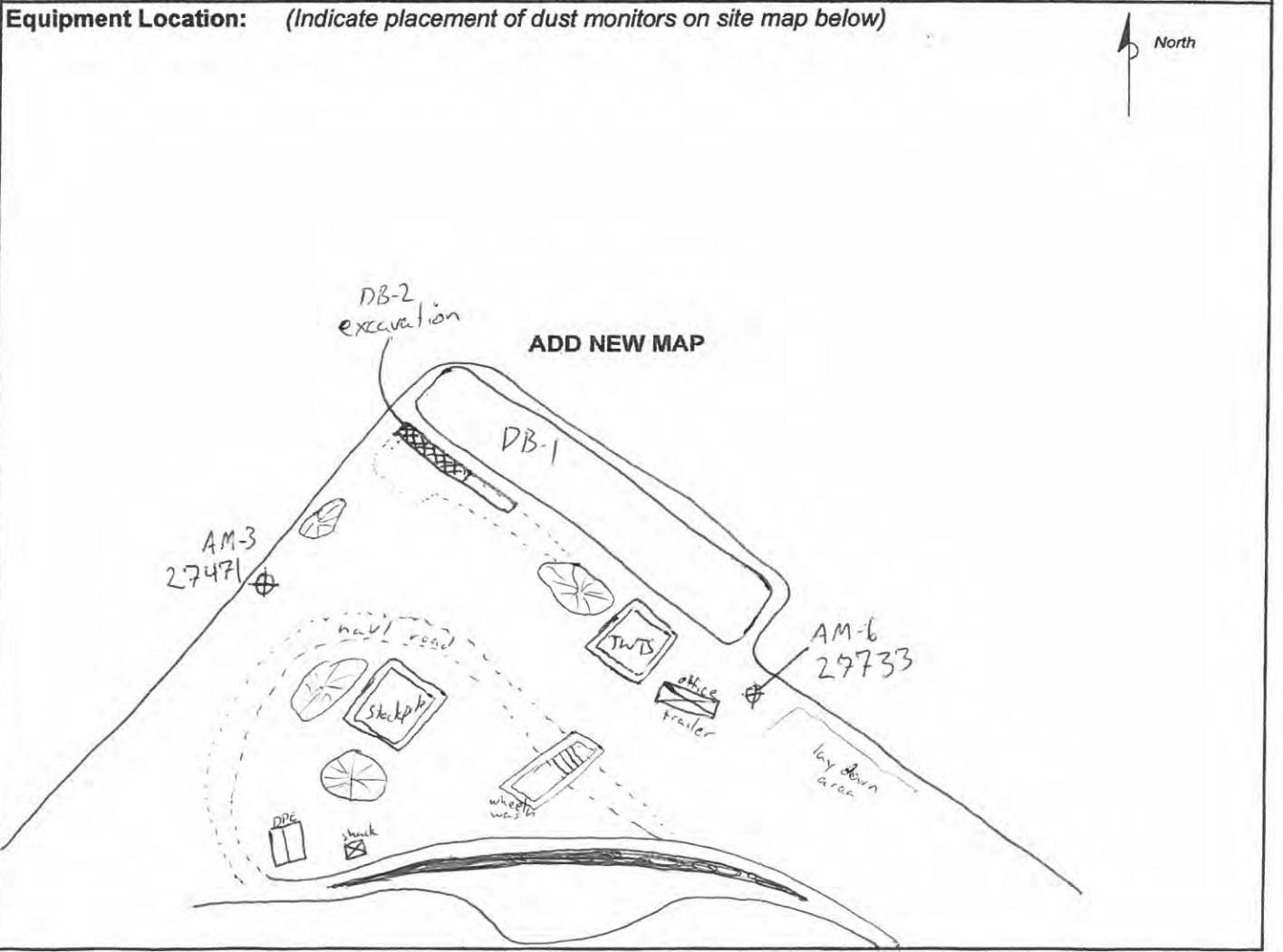
Equipment Location: (Indicate placement of dust monitors on site map below)



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 09-07-2017	Shift: DAY / NIGHT	Weather: smoke	Page: 1 of 2
Monitoring Personnel: Ryan Brauchla		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Excavation continues in north corner of site. A-line excavated from row 3 to row 6 north sidewall left in place to control water inflow from PB-1 will be excavated after A-line back fill * Instruments calibrated using zero filter
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	27471	27733	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hr	24 hr	
Datalogger On/Off?:	on, not saved	on not saved	
(Record meter readings starting on page 2)			



DUST MONITORING FIELD LOG
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

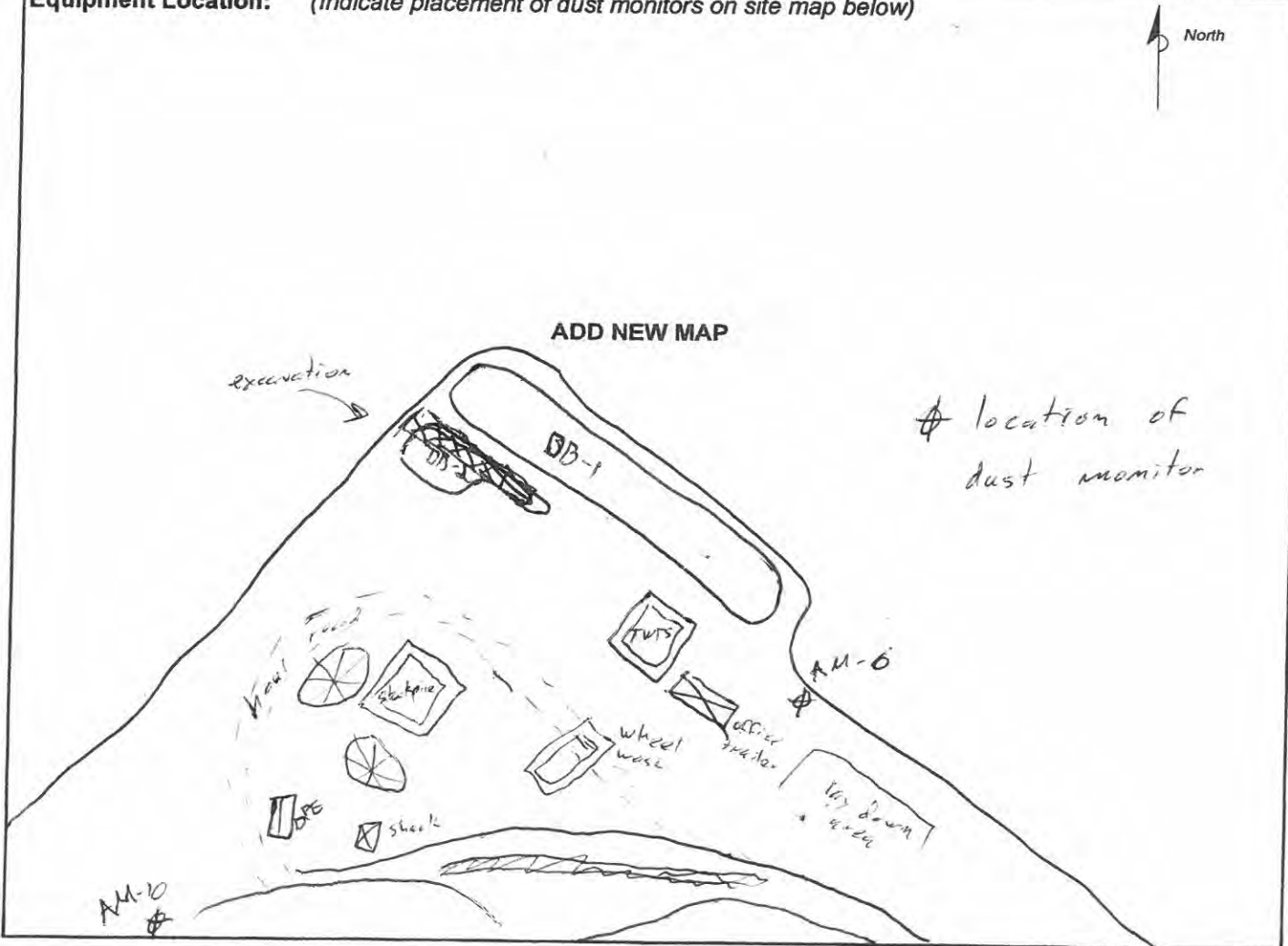
Meter Readings				Personnel:	Date:	Page:
				Ryan Brauchle	09-06-2017	2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA			
0800	27471 (u)	0.080	0.000	@ AM-6		
0804	27733 (d)	0.043	0.000	@ AM-2		
0900	27471 (u)	0.083	0.010			
0902	27733 (d)	0.047	0.002			
0954	27471 (u)	0.084	0.020			
0958	27733 (d)	0.043	0.007			
1101	27471 (u)	0.086	0.032			
1107	27733 (d)	0.044	0.014			
1200	27471 (u)	0.087	0.043			
1202	27733 (d)	0.043	0.019			
1303	27733 (u)	0.039	0.024	wind changed direction - this is upwind now		
1314	27471 (d)	0.086	0.056	action level reached - however, this monitor was upwind		
1407	27733 (u)	0.090	0.066	most of the day and there is a significant amt		
1410	27471 (d)	0.076	0.030	of smoke (very little dust) dust suppression unnecessary		
1508	27471 (u)	0.091	0.078			
1510	27733 (d)	0.047	0.036			
1608	27471 (u)	0.093	0.084			
1610	27733 (d)	0.049	0.038			

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 9/11/17	Shift: DAY 1 NIGHT	Weather: clear, breezy	Page: 1 of 2
Monitoring Personnel: A. Pink & J. Latham		Prominent Wind Direction: AM N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: dust monitoring for DB-2 excavation & load-out
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	027471	027733	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

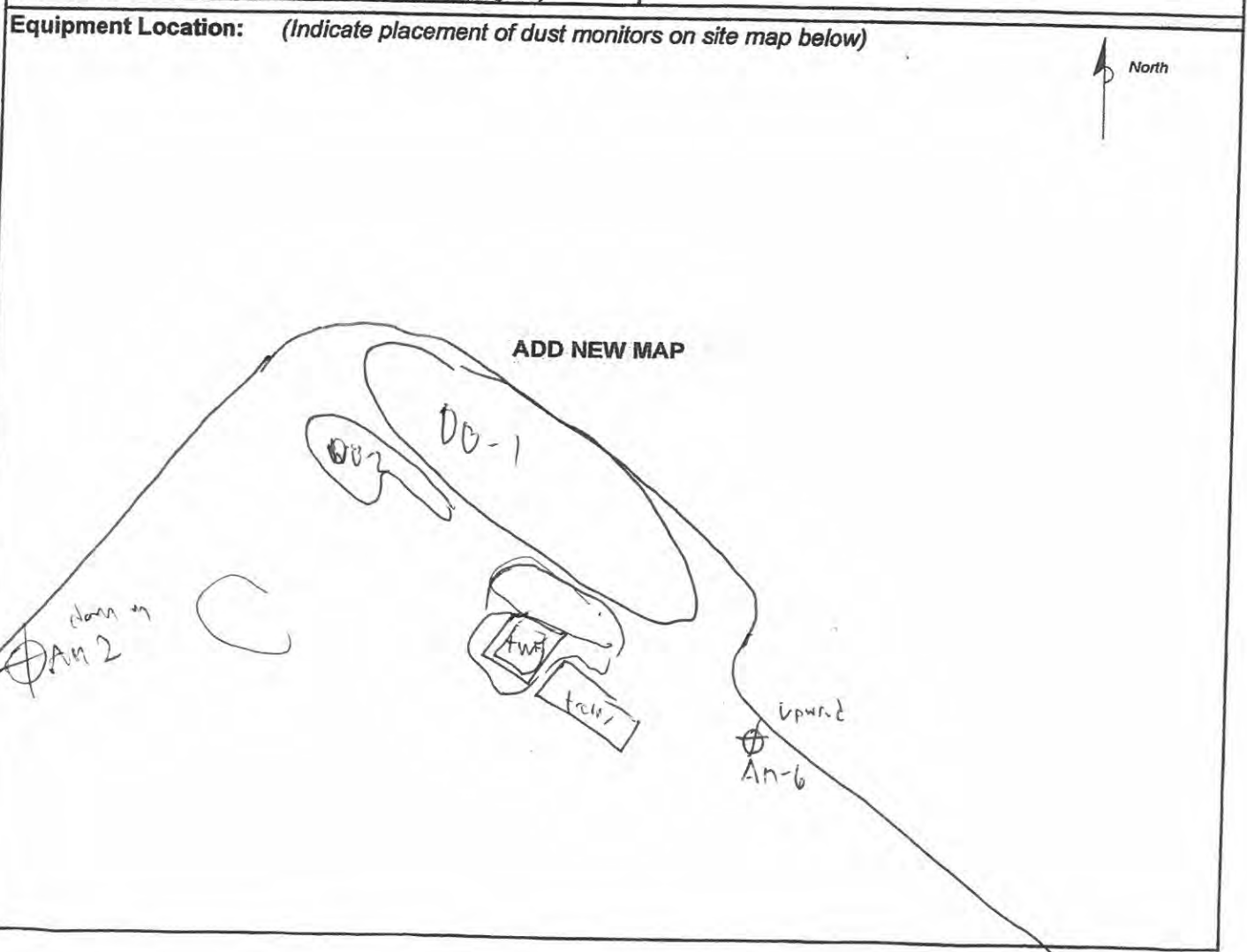
Date: 9/12/17	Shift: DAY / NIGHT	Weather: Overcast/Fog	Page: 1 of 1
Monitoring Personnel: Jan Lim		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind
Monitoring Equipment:	Dust Trak DRX	Dust Trak DRX
Meter ID:	027733	027471
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀
Averaging Period:	24 hrs	24 hrs
Datalogger On/Off?:	on	on

Construction Summary/Notes:
Excavated to gw table along B3-B8 and A2-B2.

* Monitors calibrated using zero filter

(Record meter readings starting on page 2)



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel:	Date:	Page:
				Jan Little	9/12/17	1 of 1
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA			
0800	27471	0.013	0.001	AT AM 2 (downwind)		
0815	027733	0.006	0.000	AT AM-6 (upwind)		
0908	27735	0.008	0.001			
0911	27471	0.016	0.002			
1007	27471	0.017	0.004	(wind direction change - downwind)		
1000	027735	0.009	0.002	(upwind)		
1105	27471	0.008	0.006	(downwind)		
1115	27735	0.005	0.007	(upwind)		
1202	27471	0.013	0.008	downwind		
1208	27735	0.002	0.004	upwind		
1310	27471	0.011	0.009	downwind		
1320	27735	0.002	0.004	upwind		
1410	27735	0.001	0.004	upwind		
1420	27471	0.003	0.010	downwind		
1511	27735	0.001	0.005	upwind		
1520	27471	0.002	0.010	downwind		
1611	27471	0.003	0.011	downwind		
1623	27735	0.001	0.005	upwind		
1700	27471	0.002	0.011	downwind		
1705	27735	0.005	0.005	upwind (work ends at 1700)		

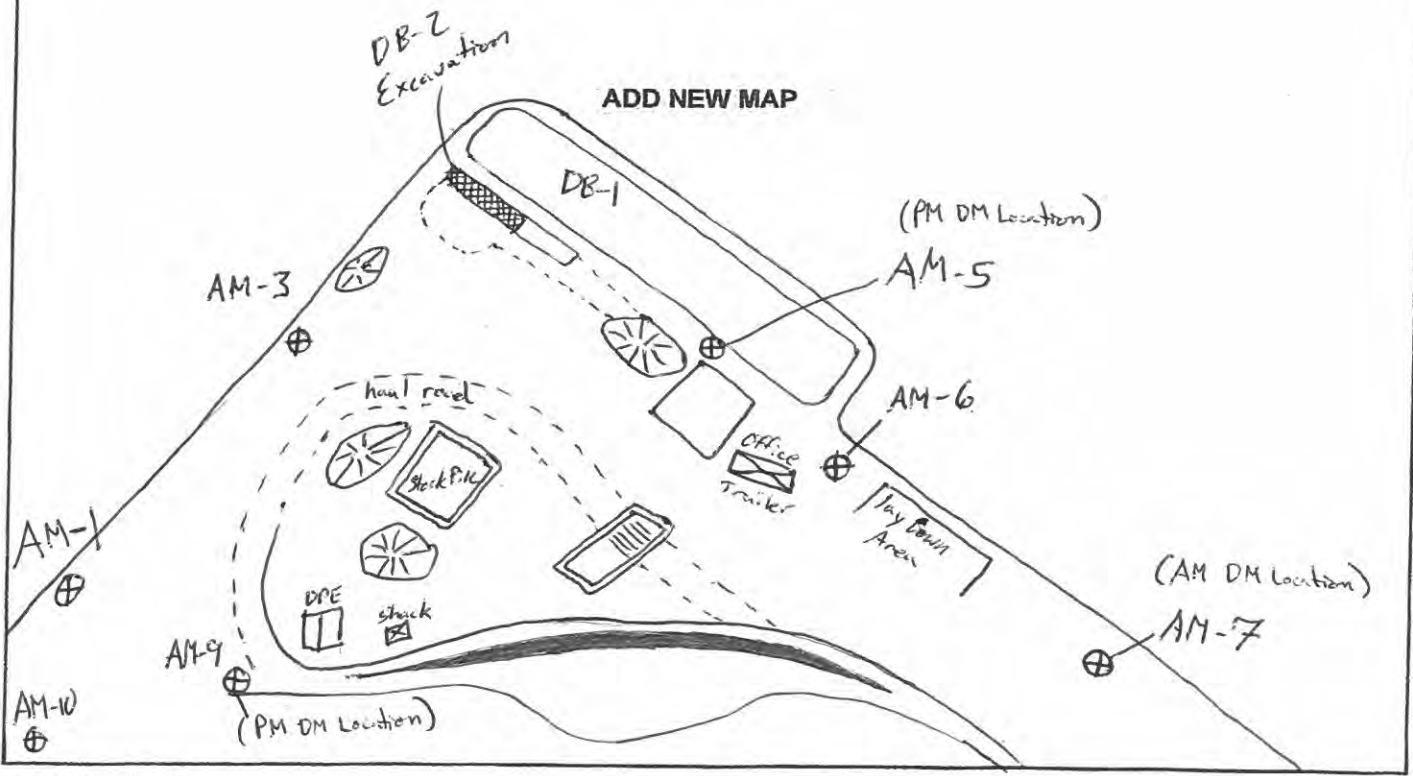
DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 09-13-2017	Shift: DAY / NIGHT	Weather: Sunny	Page: 1 of 2
Monitoring Personnel: Joe Latham		Prominent Wind Direction: N ^{PM} NW W <u>SW</u> ^{AM} S SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes:
Monitoring Equipment:	TSI DustTrack DRX	TSI DustTrack DRX	
Meter ID:	27471	27733	
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀	
Averaging Period:	24 hr	24 hr	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

* Instruments calibrated using zero filter

Equipment Location: (Indicate placement of dust monitors on site map below)



(AM DM Location)

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

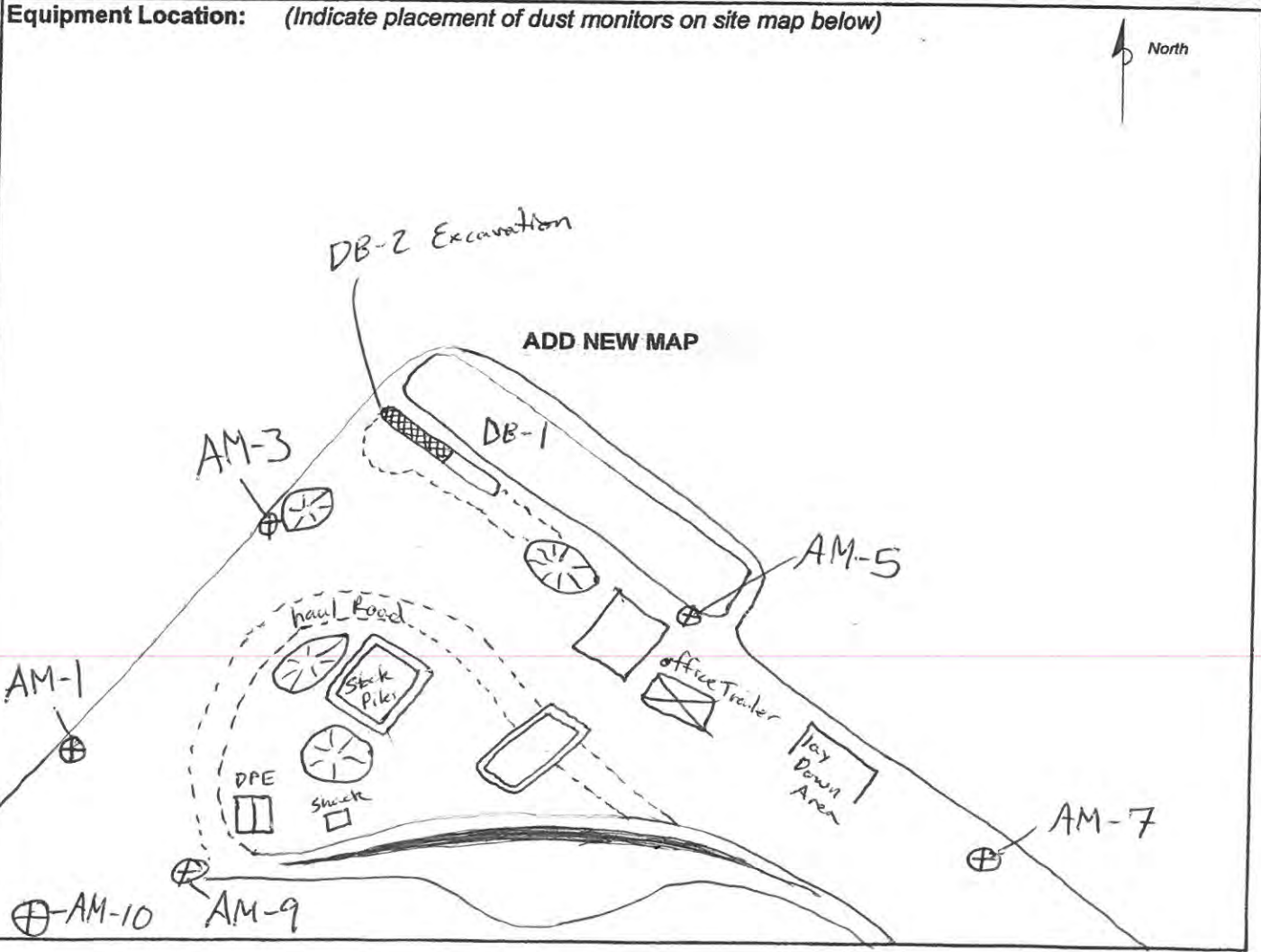
Meter Readings				Personnel:	Date:	Page:
				Joe Latham	09-13-2017	2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA			
0803	27471(u)	0.006	0.002	@ AM-10		
0810	27733(d)	0.003	0.000	@ AM-7		
0855	27471(u)	0.006	0.001			
0907	27733(d)	0.002	0.000			
1007	27471(u)	0.007	0.002			
1019	27733(d)	0.003	0.001			
1100	27471(u)	0.009	0.003			
1104	27733(d)	0.017	0.001			
1148	27471(u)	0.006	0.003			
1200	27733(d)	0.003	0.002			
1303	27471(u)	0.006	0.005	Wind direction changed from SW to N reposition Dust Stations.		
1315	27733(d)	0.000	0.002			
1408	27471(d)	0.009	0.006	@ AM-9		
1417	27733(u)	0.008	0.002	@ AM-5		
1507	27471(d)	0.008	0.007			
1518	27733(u)	0.006	0.003			
1602	27471(d)	0.006	0.007			
1613	27733(u)	0.007	0.003			
1712	27471(d)	0.004	0.007			
1723	27733(u)	0.005	0.003			

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 09-14-2017	Shift: DAY 1 NIGHT	Weather: Sunny	Page: 1 of 2
Monitoring Personnel: Joe Latham		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes:
Monitoring Equipment:	TSI Dust Track DRX	TSI Dust Track DRX	
Meter ID:	27733	27471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hr	24 hr	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

* Instruments Cal'd using zero filter.



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

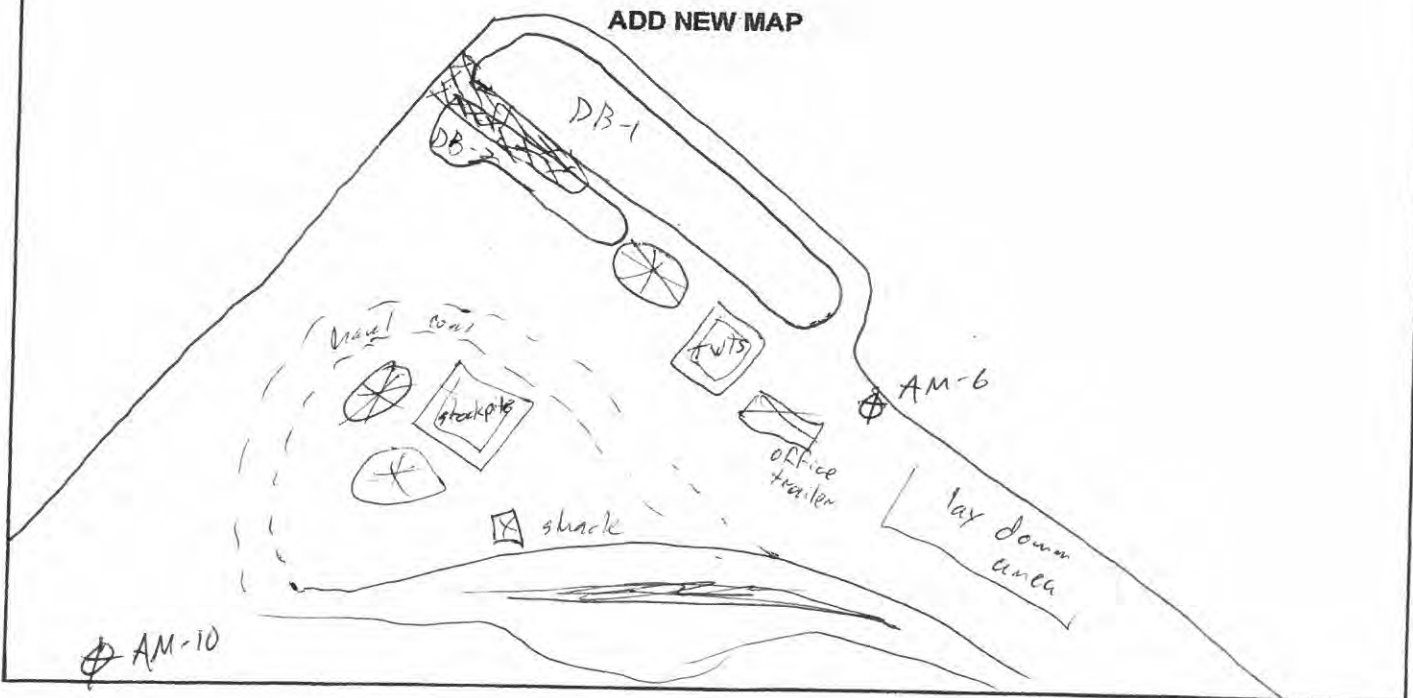
Meter Readings				Personnel: Joe Latham	Date: 9-14-17	Page: 2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA ✓			
0734	27471(d)	0.007	0.001	@ AM-1		
0740	27733(w)	0.003	0.000	@ AM-7		
0834	27471(d)	0.004	0.001			
0842	27733(w)	0.004	0.001			
0934	27471(d)	0.006	0.001			
0942	27733(w)	0.004	0.001			
1034	27471(d)	0.009	0.003	Wind Direction changed from E to NE		
1042	27733(w)	0.004	0.002	Reposition Dust Monitors		
1134	27471(d)	0.006	0.004	@ DPE system		
1142 JL	27733(w)	0.008	0.002	@ AM-5		
1232	27471(d)	0.007	0.004			
1240	27733(w)	0.006	0.003			
1332	27471(d)	0.004	0.005	Wind Direction changed from NE to W		
1339	27733(w)	0.005	0.004	Reposition Dust Monitors		
1433	27733(w)	0.003	0.005	@ AM-10		
1442	27471(d)	0.002	0.005	@ AM-7		
1533	27733(w)	0.005	0.005			
1542	27471(d)	0.002	0.006			
1633 JL	27471(d)	0.002	0.005			
JL 1642	27733(w)	0.002	0.006			
1642	27471(d)	0.002	0.006			

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 9/15/17	Shift: DAY 1 NIGHT	Weather: Sunny, clear	Page: 1 of 2
Monitoring Personnel: A. Pink		Prominent Wind Direction: AM N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: dust monitoring for DB-2 excavations & loadout - excavating in NW corner dust monitors calibrated using zero cal filter
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	027733	027471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



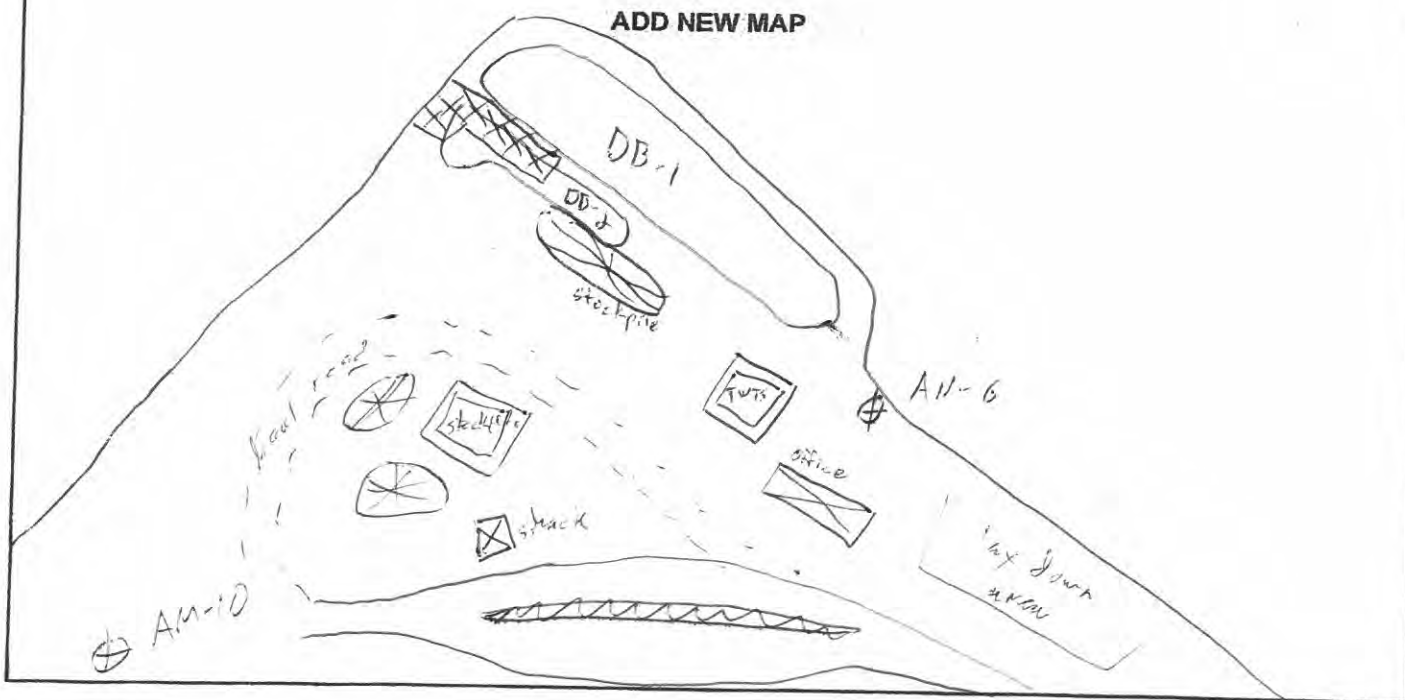
DUST MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 9/18/17	Shift: (DAY) 1 NIGHT	Weather: overcast in AM, rain overnight	Page: 1 of 2
Monitoring Personnel: AP		Prominent Wind Direction: N ⁴⁵ NW W SW S SE E NE ⁴⁵	Wind Speed: (LIGHT) MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes:	
Monitoring Equipment:	TSI DustTrak DRx 027471	TSI DustTrak DRx		dust monitoring for DB-2 excavation & load-out. Excavation in NW corner. * sensors calibrated using zero cal filters
Meter ID:	027471	027733		
Particulate Size:	(PM _{2.5}) PM ₁₀	(PM _{2.5}) PM ₁₀		
Averaging Period:	24 hrs	24 hrs		
Datalogger On/Off?:	on, not saved	on, not saved		
(Record meter readings starting on page 2)				

Equipment Location: (Indicate placement of dust monitors on site map below)



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

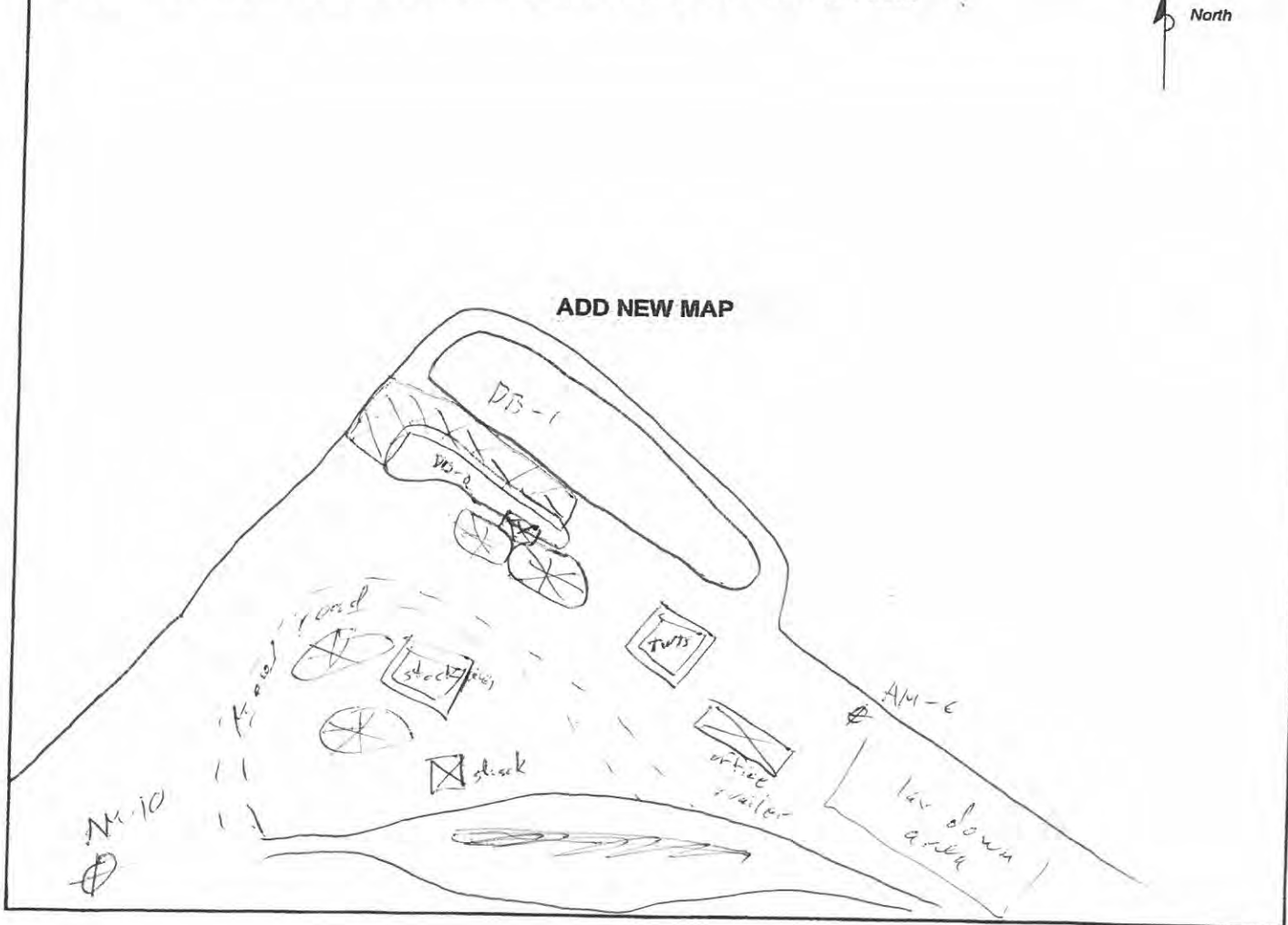
Date: 9/19/17	Shift: <u>DAY</u> 1 NIGHT	Weather: scattered showers	Page: 1 of 2
Monitoring Personnel: AP		Prominent Wind Direction: N NW W ^{AM} SW S SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	Upwind	Downwind
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX
Meter ID:	027733	027471
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀
Averaging Period:	24 hrs	24 hrs
Datalogger On/Off?:	on, not saved	on, not saved

Construction Summary/Notes:
 dust monitoring for DB-2 excavation and loadout.
 Excavating in NW and NE corners
 * Dust monitors calibrated using zero cal filter

(Record meter readings starting on page 2)

Equipment Location: (Indicate placement of dust monitors on site map below)

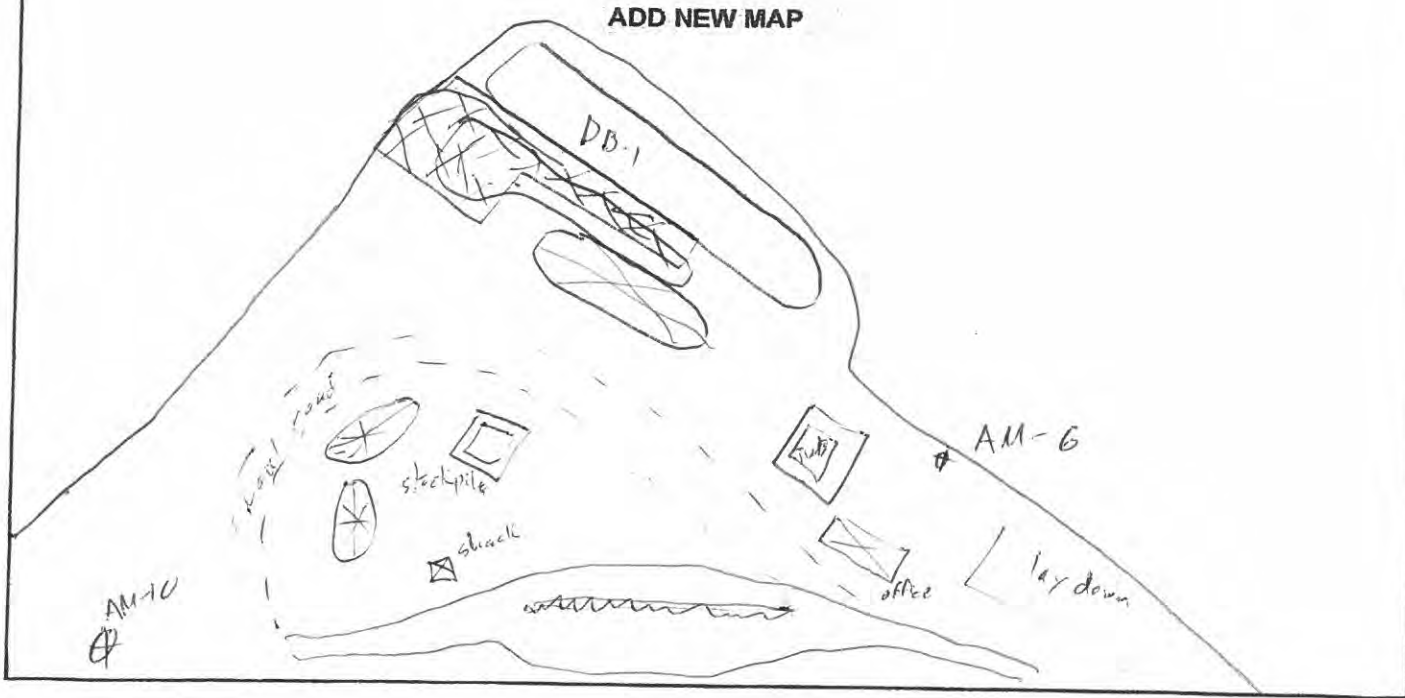


DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 9/20/17	Shift: DAY 1 NIGHT	Weather: partly cloudy	Page: 1 of 2
Monitoring Personnel: AP		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: dust monitoring for DB-2 excavation. Excavating in SW corner * Monitors were calibrated using zero cal filters
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	027471	027733	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 9-21-17	Shift: DAY 1 NIGHT	Weather: Rain / Sunny	Page: 1 of 2
Monitoring Personnel: Joe Latham		Prominent Wind Direction: AM/PM N NW W (SW) S SE E NE	Wind Speed: LIGHT MODERATE STRONG

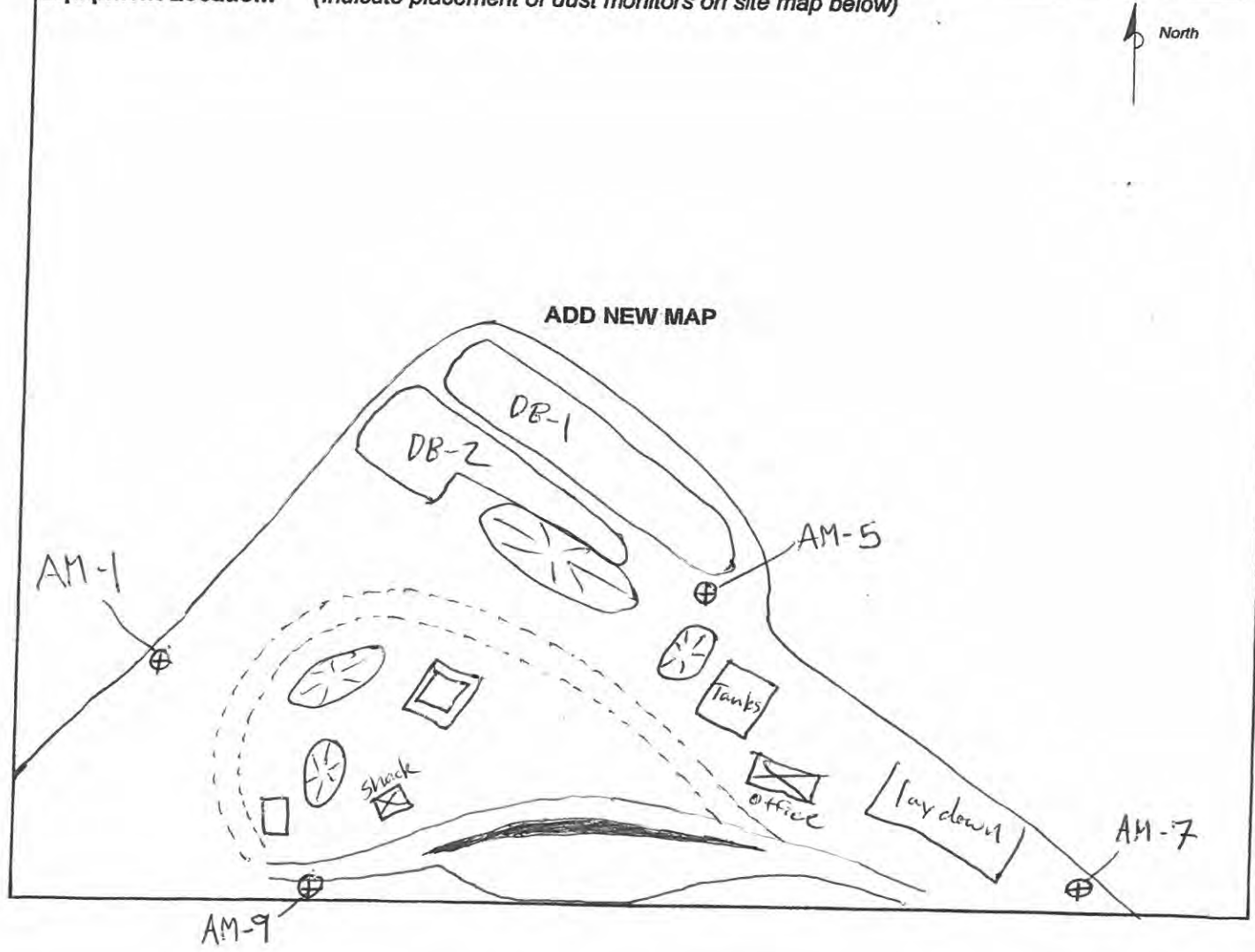
Meter Location:	Upwind	Downwind
Monitoring Equipment:	27471	27733
Meter ID:	TSI DustTrack DRX	TSI DustTrack DRX
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀
Averaging Period:	24 hrs	24 hrs
Datalogger On/Off?:	on, not saved	on, not saved

Construction Summary/Notes:
Dust Monitoring for DB-2 excavation. Excavating in SW Corner

* Monitors were calibrated using zero cal filters

(Record meter readings starting on page 2)

Equipment Location: (Indicate placement of dust monitors on site map below)



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel:	Date:	Page:
				Joe Latham	9-21-17	2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA			
0735	027471(w)	0.004	0.001	@ AM-5		
0740	027733(d)	0.004	0.000	@ AM-9		
0832	027471(w)	0.0005	0.001			
0843	027733(d)	0.004	0.001			
0932	027471(w)	0.010	0.002			
0943	027733(d)	0.007	0.002			
1034	027733(d)	0.005	0.003	Wind direction change to NW Relocate to AM-1		
1045	027471(w)	0.003	0.002	Relocate to AM-7		
1134	027733(d)	0.007	0.003			
1144	027471(w)	0.007	0.003			
1234	027733(d)	0.005	0.005			
1245	027471(w)	0.007	0.005			
1334	027733(d)	0.004	0.005			
1345	027471(w)	0.007	0.004			
1434	027733(d)	0.004	0.006			
1445	027471(w)	0.005	0.006			
1534	027733(d)	0.004	0.006			
1545	027471(w)	0.004	0.006			
1634	027733(d)	0.003	0.006			
1645	027471(w)	0.005	0.006			

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

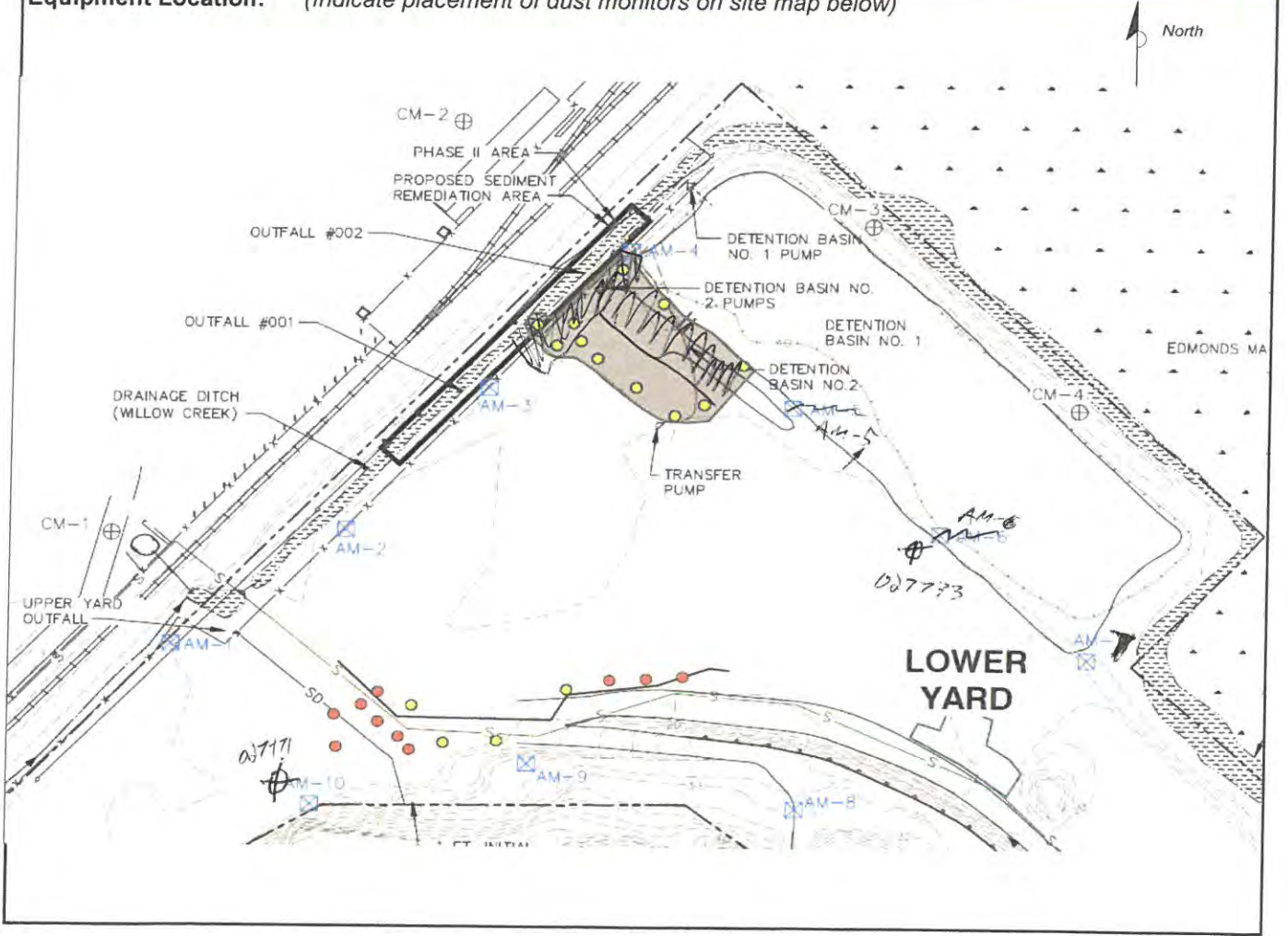
Date: 9/22/17	Shift: DAY 1 NIGHT	Weather: sunny, clear	Page: 1 of 2
Monitoring Personnel: AP		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind
Monitoring Equipment:	T51 DustTrak DRX	T51 DustTrak DRX
Meter ID:	0277 33	027471
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀
Averaging Period:	24 hrs	24 hrs
Datalogger On/Off?:	on, not saved	on, not saved

Construction Summary/Notes:
 dust monitoring for DB-2 excavation. Excavating along C line.
 * monitors calibrated using zero cal filters

(Record meter readings starting on page 2)

Equipment Location: (Indicate placement of dust monitors on site map below)



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

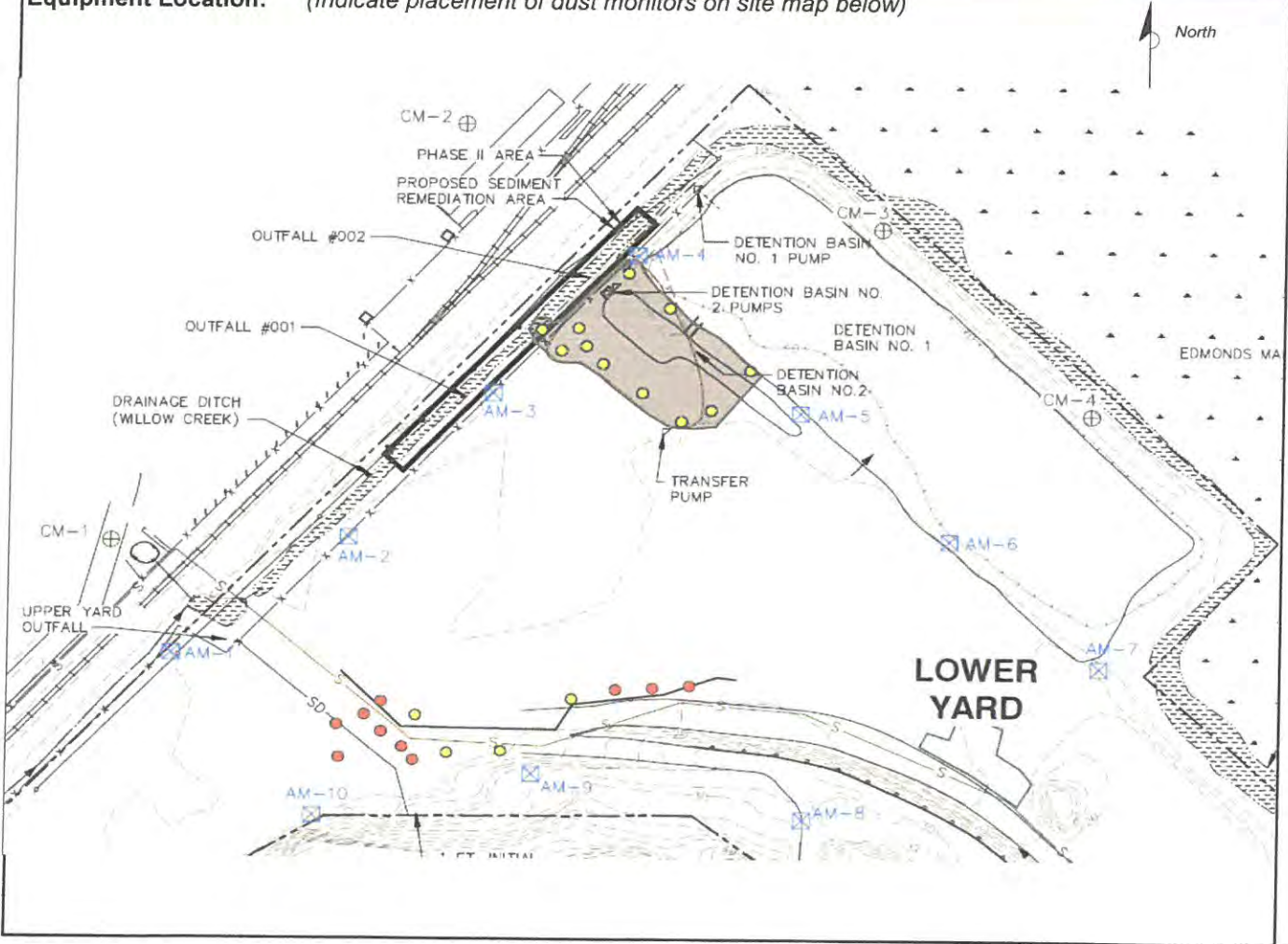
Meter Readings			Personnel: <i>AP</i>	Date: <i>9/22/17</i>	Page: <i>2</i> of <i>2</i>
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$)		Comments	
		Real-Time	TWA		
<i>0725</i>	<i>027471(d)</i>	<i>0.011</i>	<i>0.000</i>	<i>@ AM-10</i>	
<i>0734</i>	<i>027733(u)</i>	<i>0.010</i>	<i>0.000</i>	<i>@ AM-6</i>	
<i>0939</i>	<i>027471(d)</i>	<i>0.018</i>	<i>0.004</i>		
<i>0947</i>	<i>027733(u)</i>	<i>0.010</i>	<i>0.003</i>		
<i>1057</i>	<i>027471(u)</i>	<i>0.009</i>	<i>0.007</i>	<i>wind change - sensor now upwind</i>	
<i>1106</i>	<i>027733(d)</i>	<i>0.010</i>	<i>0.005</i>	<i>sensor now downwind</i>	
<i>1234</i>	<i>027471(u)</i>	<i>0.011</i>	<i>0.009</i>		
<i>1242</i>	<i>027733(d)</i>	<i>0.008</i>	<i>0.007</i>		
<i>1335</i>	<i>027471(u)</i>	<i>0.012</i>	<i>0.011</i>		
<i>1341</i>	<i>027733(d)</i>	<i>0.007</i>	<i>0.008</i>		
<i>1454</i>	<i>027471(u)</i>	<i>0.004</i>	<i>0.012</i>		
<i>1500</i>	<i>027733(d)</i>	<i>0.006</i>	<i>0.009</i>		
<i>1643</i>	<i>027471(u)</i>	<i>0.007</i>	<i>0.013</i>		
<i>1649</i>	<i>027733(d)</i>	<i>0.007</i>	<i>0.010</i>		

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 9-25-17	Shift: DAY / NIGHT	Weather: Cloudy / Rain	Page: 1 of 2
Monitoring Personnel: Joe Latham		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Dust Monitoring for DB-2 Excavation, Excavating along C line. * Monitors cal'd using zero cal filters
Monitoring Equipment:	TSI Dust Track DRX	TSI Dust Track DRX	
Meter ID:	027733	027471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



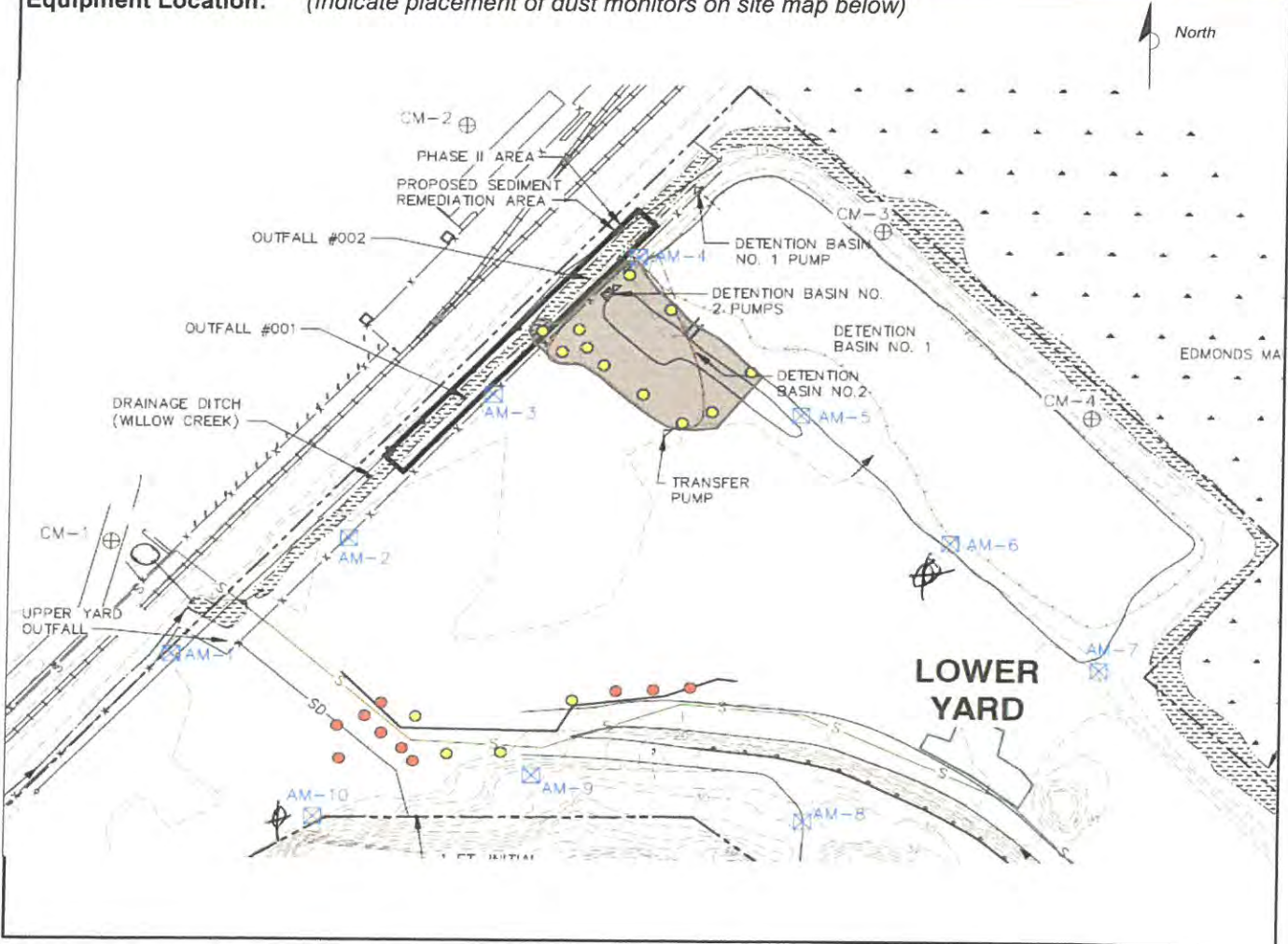
DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 9/26/17	Shift: DAY NIGHT	Weather: fog in AM, sunny, clear	Page: 1 of 2
Monitoring Personnel: AP	Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG	

Meter Location:	Upwind	Downwind	Construction Summary/Notes: dust monitoring for DB-t excavation. Excavating in SW corner. * monitors calibrated using zero cal filter
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	27733	27471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	

(Record meter readings starting on page 2)

Equipment Location: (Indicate placement of dust monitors on site map below)



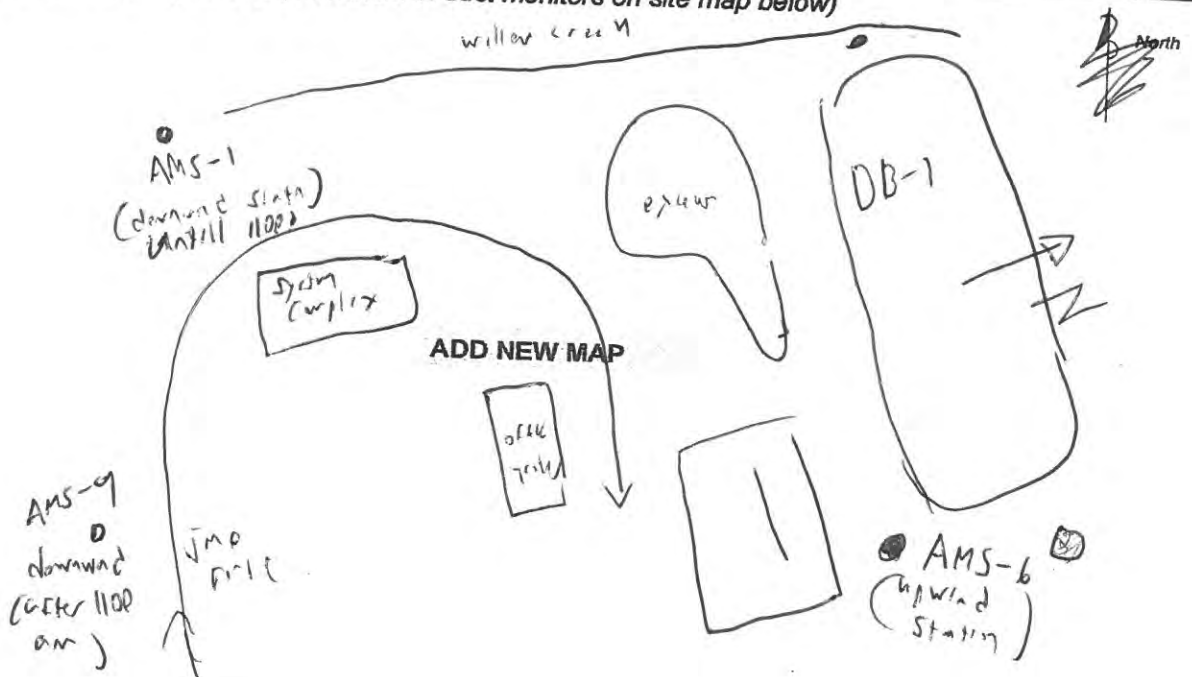
DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

9/27/17

Date: 09-28-2017	Shift: DAY 1 NIGHT	Weather: Sunny / AM Fog	Page: 1 of 2
Monitoring Personnel: Joe Latham Jay Little		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: Starting 1100 AM after h/100 am Excursion / input / exc
Monitoring Equipment:	27471	27733	
Meter ID:	TSI Dust Track DRX	TSI Dust	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hr	24 hr	
Datalogger On/Off?:	on	on	
(Record meter readings starting on page 2)			

Equipment Location: (Indicate placement of dust monitors on site map below)



DUST MONITORING FIELD LOG

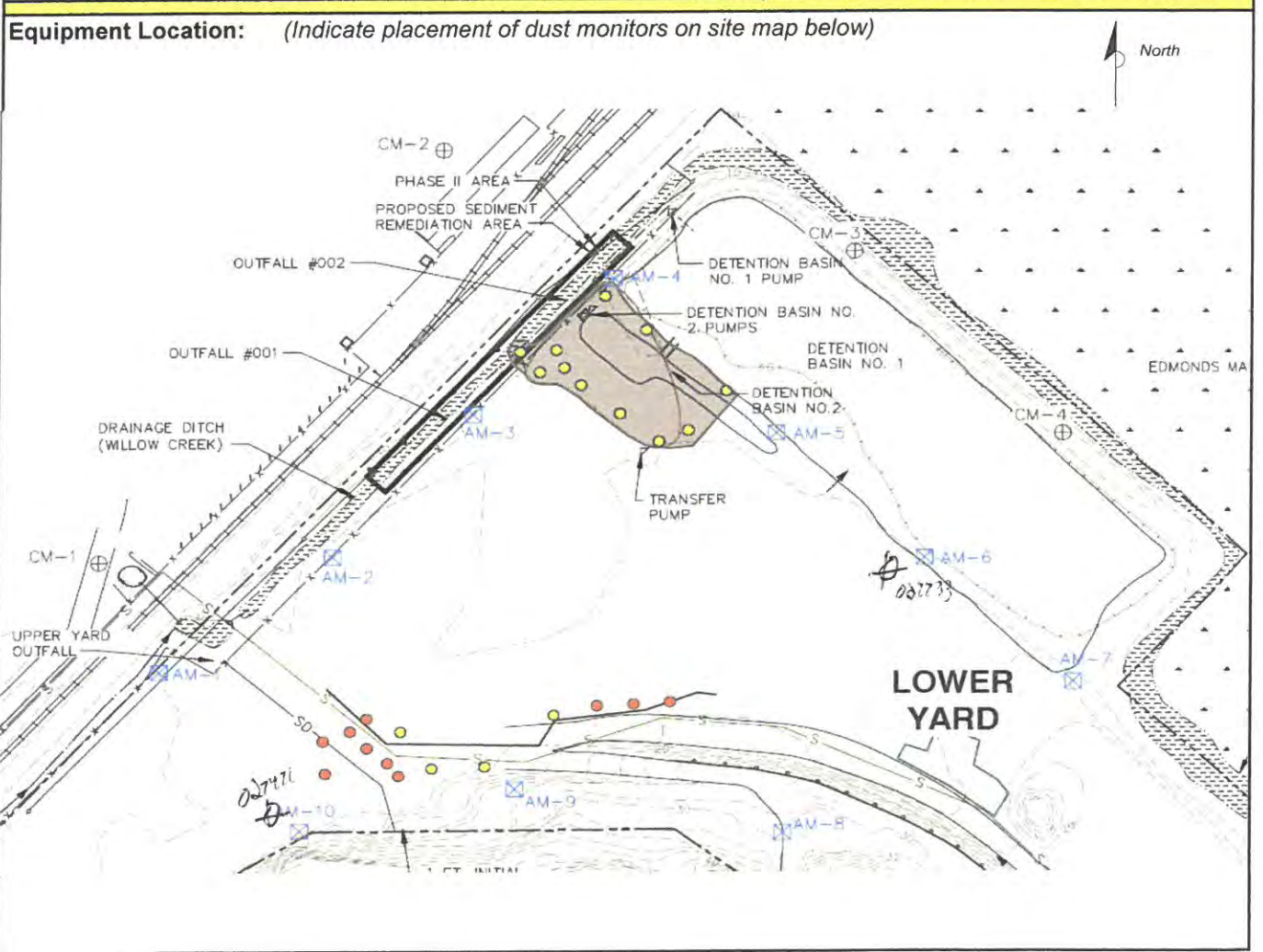
Former Unocal Edmonds Bulk Terminal
11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel: Jan Wirth	Date: 9/26/17	Page: 2 of 2
Time	Meter ID	Concentration (ug/m ³)		Comments		
		Real-Time	TWA			
0730	27771	0.018	0.000	set at AMS-6		
0740	27773	0.012	0.000	set at AMS-1		
0840	27771	0.004	0.003	upwind		
0950	27773	0.004	0.002	downwind		
1100	027733	0.005	0.003	Moved to AMS-9 (wind direction change → SE)		
1118	027471	0.003	0.004	Moved to AMS-4 (wind direction change → N)		
1208	027471	0.003	0.004	upwind		
1214	27773	0.003	0.004	downwind		
1300	027733	0.003	0.004	downwind		
1310	027471	0.001	0.005	upwind		
1425	027471	0.004	0.005	upwind		
1433	027733	0.010	0.006	downwind		
1600	027471	0.002	0.006	upwind		
1610	027733	0.004	0.006	downwind		

DUST MONITORING FIELD LOG
Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 9/29/17	Shift: DAY 1 NIGHT	Weather: sunny, clear	Page: 1 of 2
Monitoring Personnel: AP		Prominent Wind Direction: ^{Am} E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: dust monitoring for stockpile loadout * monitors were calibrated using zero cal filters
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Meter ID:	027733	027471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	
(Record meter readings starting on page 2)			



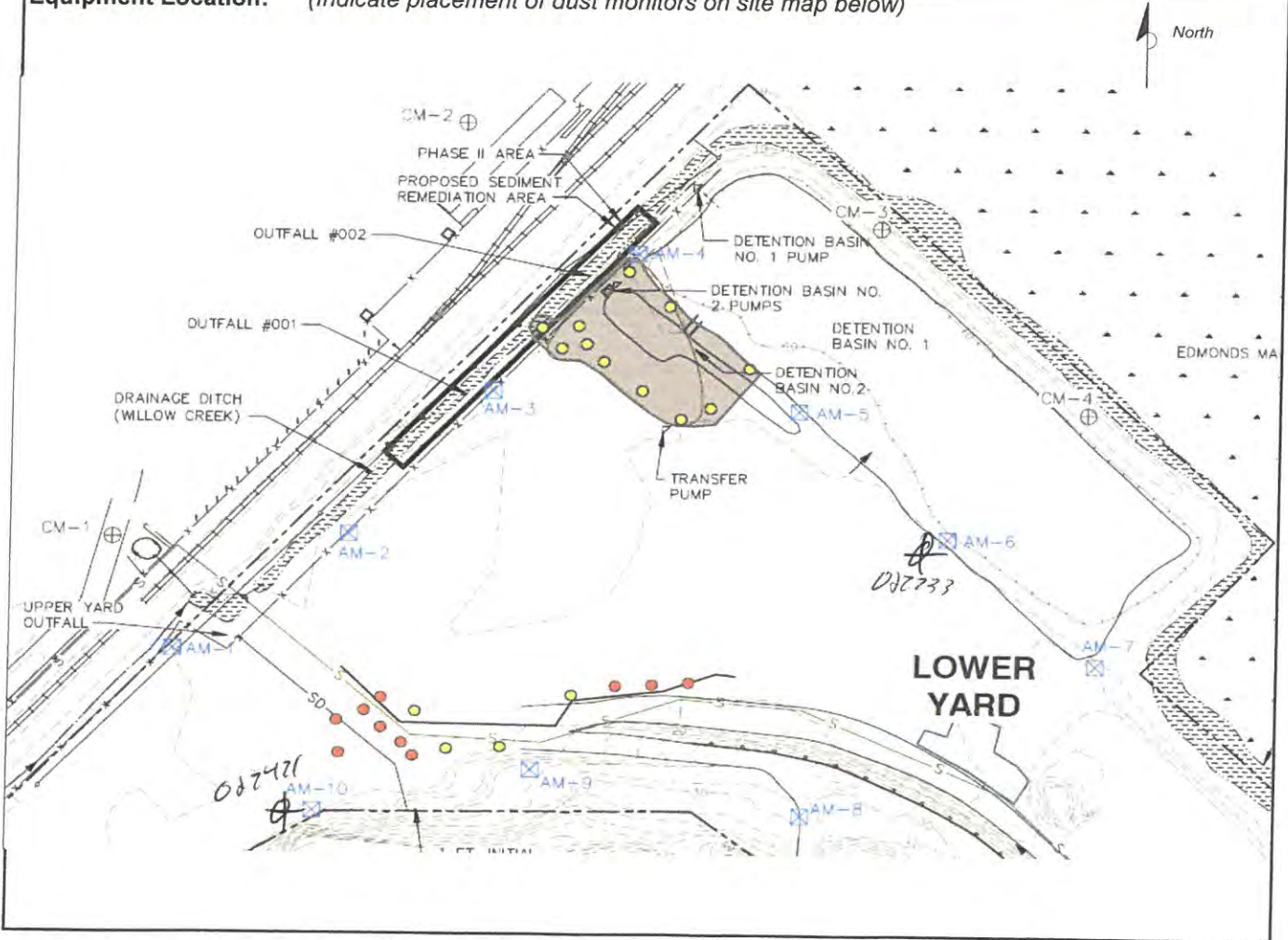
DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date:	Shift: DAY / NIGHT	Weather: overcast, rain, wind	Page: 1 of 2
Monitoring Personnel: AP		Prominent Wind Direction: N NW W SW S SE E NE	Wind Speed: LIGHT MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: dust monitoring for DB-2 excavation & loadout * monitors calibrated using zero cal filters
Monitoring Equipment:	TSI DustTrakDRx	TSI DustTrakDRx	
Meter ID:	027733	027471	
Particulate Size:	PM _{2.5} PM ₁₀	PM _{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	

(Record meter readings starting on page 2)

Equipment Location: (Indicate placement of dust monitors on site map below)

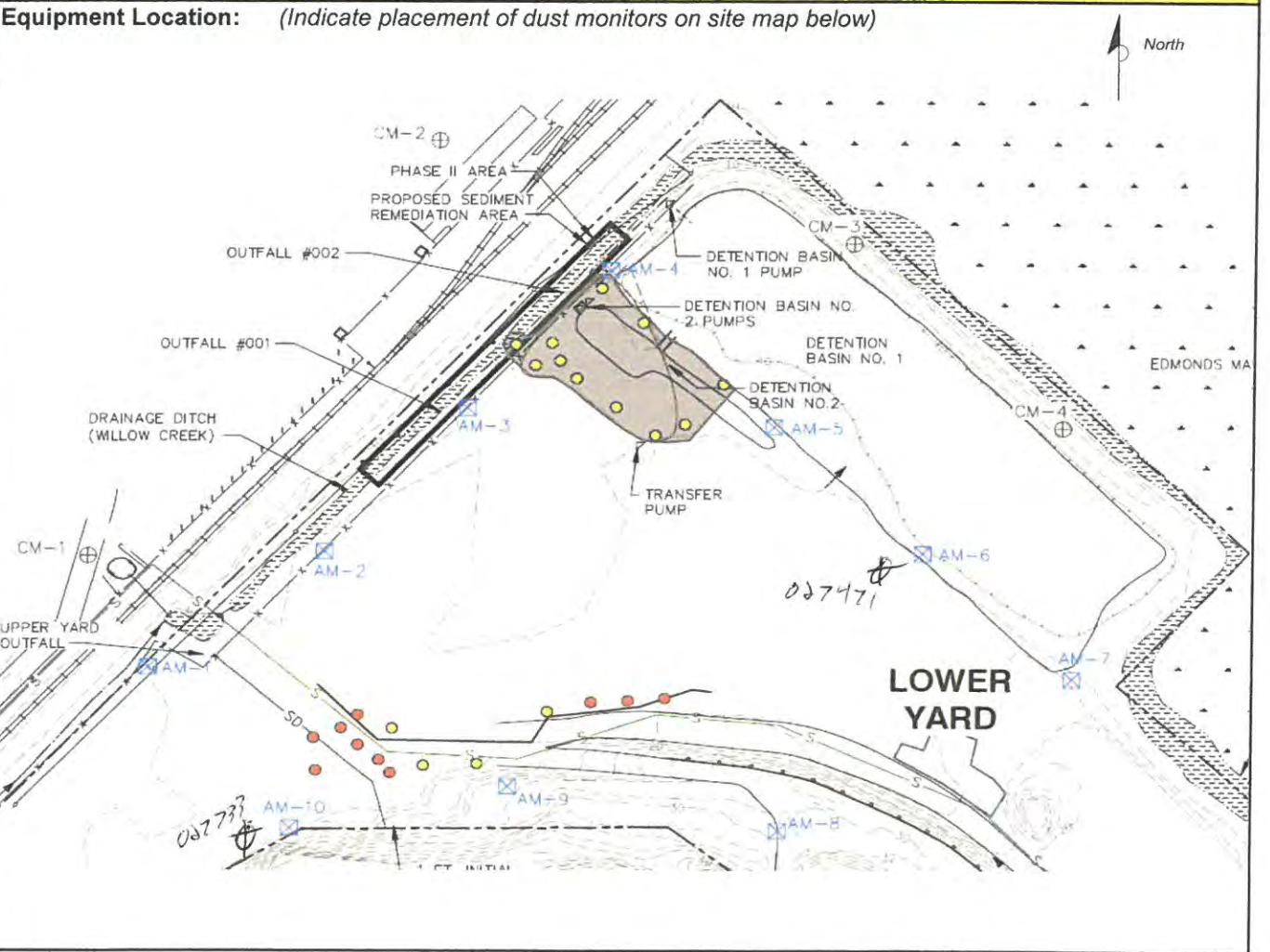


DUST MONITORING FIELD LOG

Former Unocal Edmonds Terminal
11720 Unoco Road, Edmonds, Washington

Date: 10/2/17	Shift: DAY 1 NIGHT	Weather: overcast	Page: 1 of 2
Monitoring Personnel: AP		Prominent Wind Direction: N NW W SW S SE E (NE)	Wind Speed: (LIGHT) MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes:	
Monitoring Equipment:	TSI DustTrak DRX	TSI DustTrak DRX		dust monitoring for DB-2 excavation. Excavating along south wall of excavation. * monitors calibrated using zero cal filters
Meter ID:	027771	027733		
Particulate Size:	(PM _{2.5}) PM ₁₀	(PM _{2.5}) PM ₁₀		
Averaging Period:	24 hrs	24 hrs		
Datalogger On/Off?:	on, not saved	on, not saved		
(Record meter readings starting on page 2)				

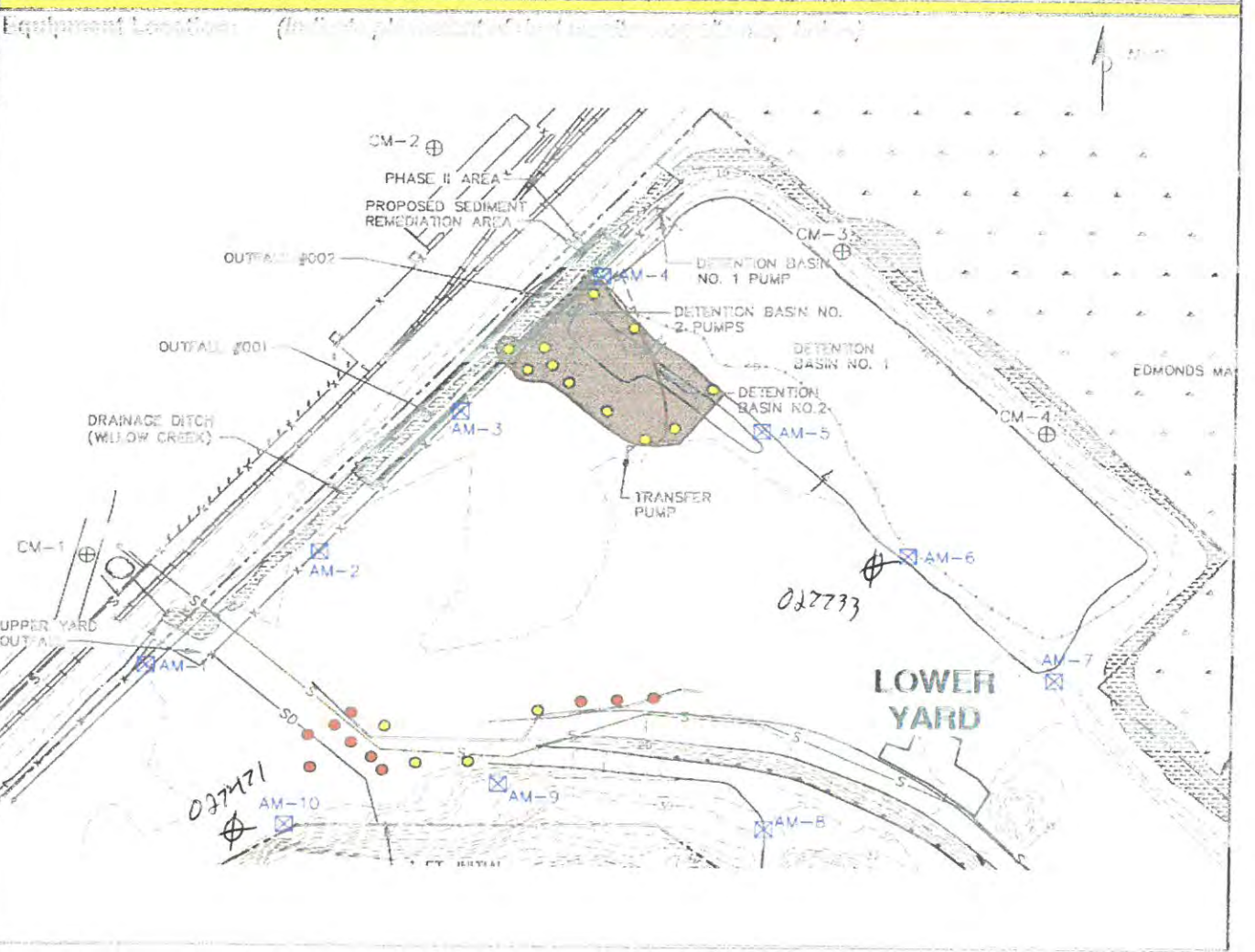


DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

Date: 10/3/17	Shift: (DAY) 1 NIGHT	Weather: sunny, clear	Page: 1 of 2
Monitoring Personnel: AP		Prominent Wind direction: N NW W SW S SE E NE	Wind speed: (LIGHT) MODERATE STRONG

Meter Location:	Upwind	Downwind	Construction Summary/Notes: excavation complete. dust monitoring for loadout and backfill of DB-2 * monitors calibrated using zero cal filters
Monitoring Equipment:	027733 ↙	027471 ↙	
Meter ID:	TSI DustTrak DRX	TSI DustTrak DRX	
Particulate Size:	(PM_{2.5}) PM₁₀	(PM_{2.5}) PM₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off?:	on, not saved	on, not saved	

(Record meter readings starting on page 2)



DUST MONITORING FIELD LOG
 Former United Klotz's Bulk Terminal
 11221 Van Ness Road, Alexandria, Washington

Personnel:

AP

Date:

10/3/17

Page:

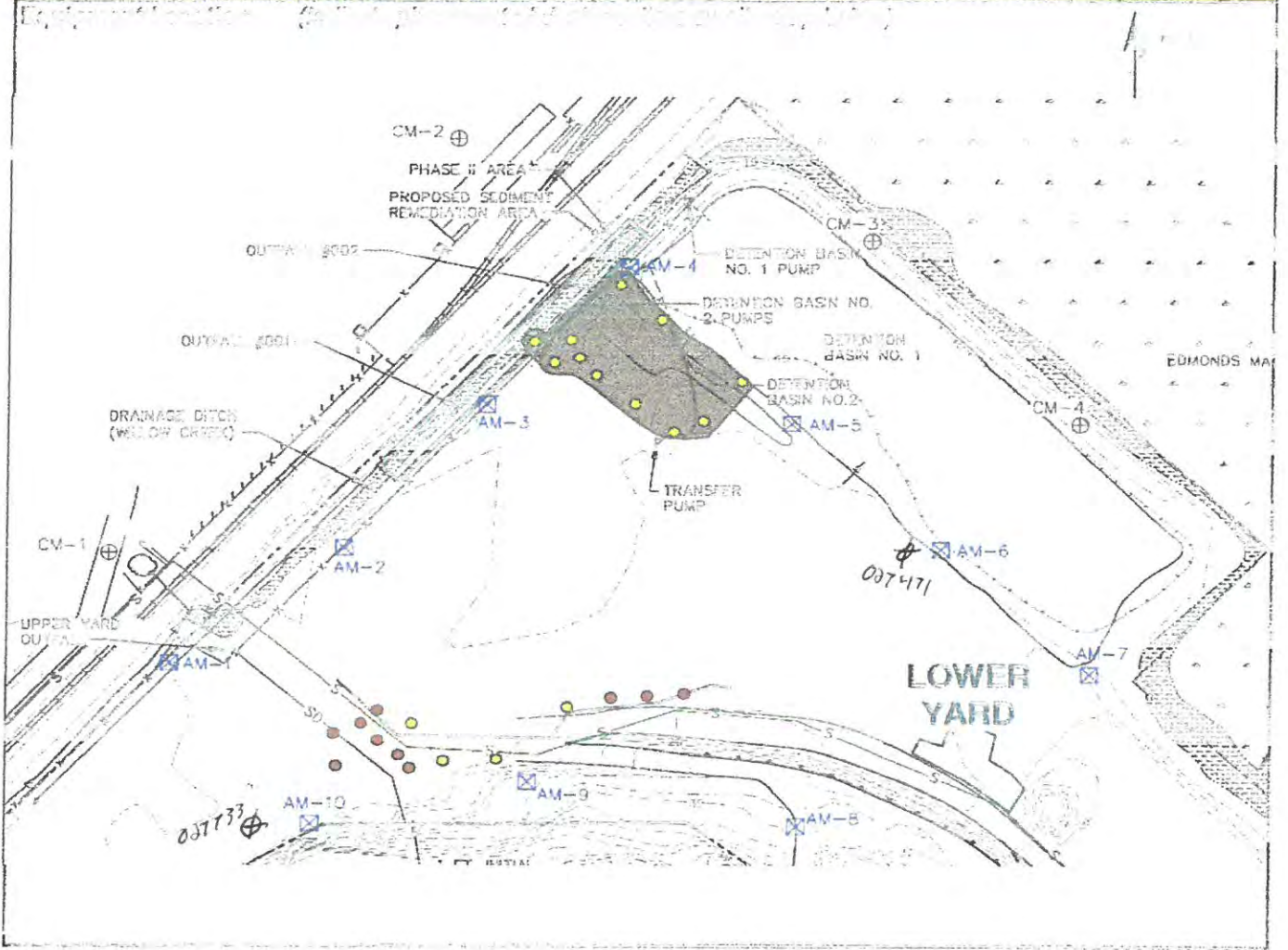
2 of 2

Time	M	Concentration		
		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	
0757	027471(D)	0.008	0.001	@ AM-10
0801	027733(D)	0.009	0.001	@ AM-6
0906	027471(D)	0.016	0.002	
0902	027733(D)	0.009	0.002	
0956	027471(D)	0.008	0.003	
0959	027733(D)	0.005	0.002	
1101	027471(D)	0.007	0.005	
1104	027733(D)	0.009	0.003	
1237	027471(D)	0.009	0.006	
1240	027733(D)	0.004	0.005	
1335	027471(D)	0.006	0.007	
1338	027733(D)	0.003	0.005	
1423	027471(D)	0.006	0.008	
1426	027733(D)	0.002	0.005	
1536	027471(D)	0.005	0.008	
1539	027733(D)	0.004	0.006	

DUST MONITORING FIELD LOG
 Former United Edward's Terminal
 11725 W. 11th St., Edmonds, WA 98149

Date: 10/4/17	Shift: (DAY) 1 NIGHT	Weather: sunny, clear	Page: 1 of 2
AP		N NW W SW S SE E NE	Wind Speed: (LIGHT) MODERATE STRONG

Monitor Location:	Upwind	Downwind	excavation complete, just monitoring for backfill and loadout. * monitors calibrated using zero cal filter
Modeling Equipment:	TSI DustTrak DRX	TSI DustTrak DRX	
Model ID:	027471	027733	
Filterate Size:	(PM _{2.5}) PM ₁₀	(PM _{2.5}) PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Data Logger On/Off:	on, not saved	on, not saved	
<small>(Monitor model markings appear on page 2)</small>			



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Personnel: **AP**

Date: **10/4/17**

Page: **2** of **2**

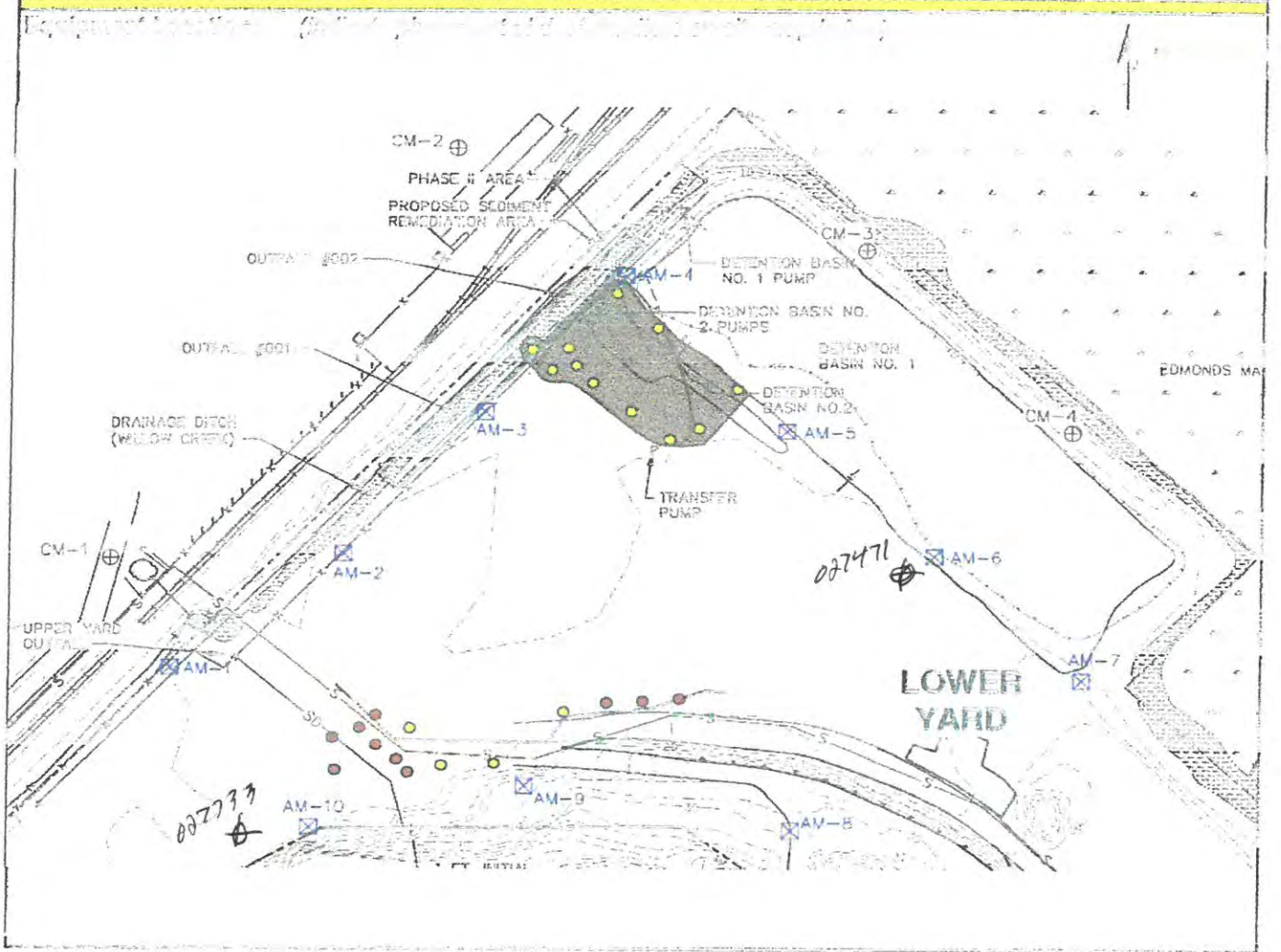
Meter Readings				Comments
Time	Meter ID	Concentration (ug/m ³)		
		Read Time	TSP	
0737	027733(a)	0.005	0.000	@ AM - 10
0741	027471(u)	0.007	0.000	@ AM - 6
0847	027733(a)	0.008	0.001	
0851	027471(u)	0.007	0.001	
0944	027733(a)	0.008	0.002	
0948	027471(u)	0.006	0.002	
1100	027733(a)	0.010	0.004	
1103	027471(u)	0.007	0.003	
1206	027733(a)	0.006	0.005	
1200	027471(u)	0.008	0.004	
1304	027733(a)	0.011	0.006	
1308	027471(u)	0.004	0.004	
1406	027733(a)	0.005	0.006	
1409	027471(u)	0.004	0.005	
1548	027733(a)	0.007	0.008	
1553	027471(u)	0.005	0.006	

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DUST MONITORING FIELD LOG
 Former United Earthwork Terminal
 11720 W. 11th St., Edmonds, WA 98149

Date: 10/5/17	Site: DMT : MONT	Weather: sunny, clear	Page: 1 of 2
AP		N NW W SW S SE E NE	DMT MODERATE STRONG

Location:	Upwind	Downwind	
Modeling Equipment:	731 DustTrak DRX	731 DustTrak DRX	excavation complete. Dust monitoring For back fill & loadout. * monitors calibrated using zero cal Filters
Model ID:	027733	027471	
Filterate Size:	PM_{2.5} PM ₁₀	PM_{2.5} PM ₁₀	
Averaging Period:	24 hrs	24 hrs	
Datalogger On/Off:	on, not saved	on, not saved	



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings		Personnel: AP		Date: 10/5/17	Page: 2 of 2
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$)		Comment	
		Read Time	TSP		
0724	027733(D)	0.013	0.000	@ AM-10	
0728	027471(W)	0.017	0.001	@ AM-6	
0826	027733(D)	0.017	0.002		
0830	027471(W)	0.020	0.003		
0947	027733(D)	0.019	0.005		
0950	027471(W)	0.015	0.006		
1049	027733(D)	0.018	0.008		
1052	027471(W)	0.013	0.008		
1138	027733(D)	0.018	0.010		
1431	027733(D)	0.016	0.016		
1436	027471(W)	0.009	0.013		
1528	027733(D)	0.009	0.017		
1532	027471(W)	0.006	0.014		

DUST MONITORING FIELD LOG
 Former Unocal Edmonds Terminal
 11720 Unoco Road, Edmonds, Washington

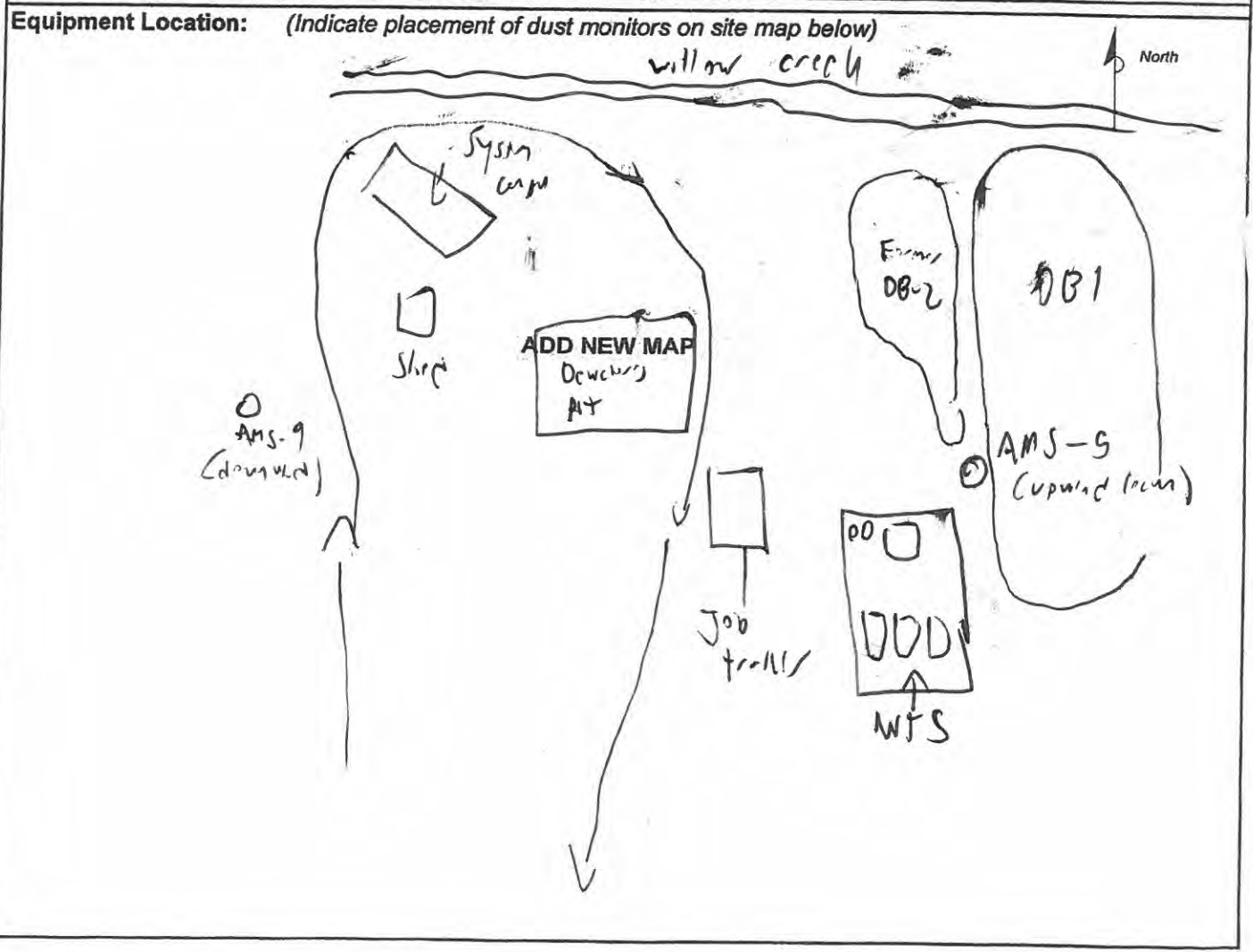
Date:	Shift: DAY / NIGHT	Weather: 49° Partly cloudy	Page: 1 of
Monitoring Personnel: Justin White		Prominent Wind Direction: N NW W SW <u>S</u> SE E NE	Wind Speed: <u>LIGHT</u> MODERATE STRONG

Meter Location:	<u>Upwind</u>	<u>Downwind</u>
Monitoring Equipment:	Dust TRAN DRX	Dust TRAN DRX
Meter ID:	27471	027723
Particulate Size:	<u>PM_{2.5}</u> PM ₁₀	<u>PM_{2.5}</u> PM ₁₀
Averaging Period:	24 hrs	24 hr
Datalogger On/Off?:	On	On

Construction Summary/Notes:
 Just monitoring for backfill & loadout

 * dust monitors calibrated using zero cal filters

(Record meter readings starting on page 2)



DUST MONITORING FIELD LOG
 Former Unocal Edmonds Bulk Terminal
 11720 Unoco Road, Edmonds, Washington

Meter Readings				Personnel: Jason LITSY	Date: 12/6/14	Page: of
Time	Meter ID	Concentration ($\mu\text{g}/\text{m}^3$)		Comments		
		Real Time	TSP			
0710	27471	0.017	0.000	upwind		
0720	27733	0.014	0.000	downwind		
0800	27471	0.022	0.002	upwind		
0805	27733	0.013	0.001	downwind		
900	27733	0.009	0.004	(wind direction change) - upwind		
905	27471	0.010	0.008	(wind direction change) - downwind		
1015	27733	0.012	0.009			
1020	27471	0.020	0.010			
1105	27733	0.006	0.008			
1108	27471	0.004	0.010			
1200	27733	0.002	0.007			
1205	27471	0.011	0.012			
1315	27471	0.005	0.013			
1320	27733	0.004	0.006			
1415	27471	0.000	0.013			
1418	27733	0.001	0.006			
1501	27733	0.000	0.006			
1505	27471	0.011	0.013			
1555	27471	0.006	0.014			
1601	27733	0.005	0.007			

APPENDIX B

Daily Work Logs





CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 07/31/17

ENTACT personnel onsite: 7
Subcontractor personnel onsite: 0
Total personnel onsite: 7
Weather: 53 – 81 Deg. F;

DAILY ACTIVITIES

- Held project kickoff meeting
 - Project overview
 - HASP review & test
 - Site walk
- Completed JSA review and revisions
- Performed incoming equipment inspections
- Began clearing and grubbing near entry gate
- Picked up miscellaneous materials

PLANNED ACTIVITIES

- GPRS to perform utility locates
- Install site signage
- Clear & grub office trailer footprint
- Perform survey calibration
- Delivery of portable toilets & hand wash stations
- Delivery of office trailer unit
- Delivery of geotextile and erosion control material

DELIVERIES:

- 962 wheel loader & forks
- 304 mini excavator
- XQ30 generator

ISSUES:

- None

SUBCONTRACTORS:

- None



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/01/17 & 08/02/17

ENTACT personnel onsite: 6, 6
Subcontractor personnel onsite: 1, 2
Total personnel onsite: 7, 8
Weather: 59 – 82 Deg. F;

DAILY ACTIVITIES

- Performed incoming equipment inspections
- Finished clearing and grubbing near entry gate
- Began installation of site signage
- Picked up miscellaneous materials
- Cleared and grubbed access back to electrical panels and storm drain discharges
- GPRS completed utility locates in disturbance area as well as surrounding areas
- Wired generators to office connexes and grounded
- Cleared & grubbed 22,275 SF of Lower Yard

PLANNED ACTIVITIES

- Relocate ballast rock from Upper Yard to Lower Yard
- Finish clearing & grubbing Lower Yard
- Clear & grub Upper Yard
- Weed eat around & delineate monitoring wells
- Install & delineate parking areas and pedestrian pathways
- Calibrate survey system

DELIVERIES

- 2 – office connexes
- 299D & brush cutter
- 4 – portable toilets
- 2 – hand wash stations
- Straw wattle & geotextile

ISSUES:

- None

SUBCONTRACTORS:

- GPRS (1)
- Titan Electric (2)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/03/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 0
Total personnel onsite: 6
Weather: 62 – 90 Deg. F;

DAILY ACTIVITIES

- Relocated ballast rock from Upper Yard to Lower Yard
- Cleared around & delineated monitoring wells
- Cleared & grubbed Upper Yard
- Cleared & grubbed ~82,000 SF of Lower Yard
- Began silt fence removal from perimeter of DB-2
- Relocated sanitation facilities to office areas
- Reviewed survey control map in field
- One-team reviewed earthwork sequencing in field

PLANNED ACTIVITIES

- Finish clearing & grubbing Lower Yard
- Install & delineate parking areas and pedestrian pathways
- Remove fencing along Willow Creek
- Begin clearing & grubbing along Willow Creek
- Install straw wattle around surface water drains
- Construct secondary containment for generators
- Delineate ARCADIS air monitoring areas
- Calibrate survey system

DELIVERIES

- 5 – polyethylene liners

ISSUES:

- None

SUBCONTRACTORS:

- None



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/04/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 0
Total personnel onsite: 6
Weather: 61 – 91 Deg. F;

DAILY ACTIVITIES

- Calibrated survey system
- Installed secondary containment at upper generator
- Swapped 299D skidsteer for 289D skidsteer
- Swapped 304C excavator for 307E excavator
- Performed incoming equipment inspections
- Began removal of fencing along Willow Creek
- Began clearing along Willow Creek
- Cleared parking and ARCADIS tent area at upper office trailer
- Delineated parking area at upper office trailer
- Fueled & greased heavy equipment
- Laid out rock construction cleanout, wheel wash, & truck inspection area

PLANNED ACTIVITIES

- Finish clearing & grubbing Lower Yard
- Demobilize 289D skidsteer
- Install & delineate parking areas and pedestrian pathways
- Remove remainder of fencing along Willow Creek within excavation footprint
- Finish clearing along Willow Creek
- Install straw wattle around surface water drains
- Construct secondary containment for generator at lower office trailer
- Delineate ARCADIS air monitoring areas
- Organize material & equipment laydown area
- Delivery of tractor with side boom mower

DELIVERIES

- Fuel
- 289D skidsteer and 307E excavator

ISSUES:

- Warning light for hydraulic cap and filter on 299D skidsteer

SUBCONTRACTORS:

- None



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/07/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 0
Total personnel onsite: 6
Weather: 56 – 81 Deg. F;

DAILY ACTIVITIES

- Finished clearing Lower Yard - ~ 25,000 SF
- Continued removal of fencing along Willow Creek
- Continued clearing along Willow Creek
- Installed straw wattle along disturbance area of Willow Creek
- Cleared South & East ends of DB-2
- Disassembled DB-2 discharge piping on West end of DB-2
- Performed incoming equipment inspection on tractor with side boom mower
- Laid out DB-2 excavation extents
- Picked up water meter and fire hydrant use permit

PLANNED ACTIVITIES

- Install & delineate parking areas and pedestrian pathways
- Remove remainder of fencing along Willow Creek within excavation footprint
- Finish clearing along Willow Creek
- Clear West end of DB-2 & DB-1
- Construct secondary containment for generator at lower office trailer
- Delineate ARCADIS air monitoring areas
- Plumb in water source
- Organize material & equipment laydown area
- Delivery of wheel wash, tank, pumps, & hoses
- Delivery of water trailer
- Import saturated zone material

DELIVERIES

- Tractor w/ side boom mower
- Saturated zone backfill – 40 loads => 1175 tons

ISSUES:

- None

SUBCONTRACTORS:

- None



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/07/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 0
Total personnel onsite: 6
Weather: 56 – 81 Deg. F;

DAILY ACTIVITIES

- Identified, delineated, removed, & staged material affected by hydraulic release
- Continued removal of fencing along Willow Creek
- Continued clearing along Willow Creek
- Began clearing W end of DB-2 & DB-1
- Accepted & unloaded Rain for Rent delivery
- Imported 1162 tons of saturated zone material
- Organized material & equipment laydown area
- Held weekly one-team call

PLANNED ACTIVITIES

- Install & delineate parking areas and pedestrian pathways
- Remove remainder of fencing along Willow Creek within excavation footprint
- Finish clearing along Willow Creek
- Finish clearing West end of DB-2 & DB-1
- Clear along Upper Road with side boom mower
- Construct secondary containment for generator at lower office trailer
- Delineate ARCADIS air monitoring areas
- Plumb in water source
- Delivery of wheel wash, tank, pumps, & hoses
- Delivery of water trailer

DELIVERIES

- Rain for Rent – trash pumps, hoses, & wheel wash
- Saturated zone backfill – 38 loads => 1162 tons

ISSUES:

- Hydraulic release from import truck/trailer near SE corner of DB-2

SUBCONTRACTORS:

- None



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/09/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 0
Total personnel onsite: 6
Weather: 58 – 86 Deg. F;

DAILY ACTIVITIES

- Honey Bucket serviced sanitation facilities
- Finished removal of chain link fencing along Willow Creek
 - Posts to be removed as we progress and used for temporary fencing in the interim
- Finished clearing along Willow Creek
- Installed straw wattle along remainder of Willow Creek bank
- Finished clearing along W end of DB-2 & DB-1
- Relocated debris, fencing material, piping, and other miscellaneous material from W end of DB-2 to dumpster/laydown area
- Began clearing berm between DB-2 & DB-1
- Cleared vegetation back along Entry, Upper, & Lower Roads
- Placed Lower Yard office trailer & generator in final position

PLANNED ACTIVITIES

- Delineate lower parking area & support
- Construct secondary containment for generator at lower office trailer
- Delineate ARCADIS air monitoring areas
- Plumb in water source
- Continue clearing berm between DB-2 & DB-1
- Start constructing preliminary haul road
- Construct fuel station and accept fuel delivery
- Lay out wheel wash and TWTS footprints
- Delivery of sand & pea gravel

DELIVERIES

- Water trailer

ISSUES:

- None

SUBCONTRACTORS:

- None



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/10/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 0
Total personnel onsite: 6
Weather: 58 – 83 Deg. F;

DAILY ACTIVITIES

- Performed confined space entry to remove various wheel wash components from tank
- Installed secondary containment for generator at Lower Yard
- Delineated support zone at Lower Yard
- Continued clearing berm between DB-2 & DB-1
- Received sand & #8 gravel
- Constructed fuel station containment
- Received diesel delivery
- Review wheel wash sump excavation with one-team in field

PLANNED ACTIVITIES

- Begin installation of wheel wash
- Delineate ARCADIS air monitoring areas
- Plumb in water source
- Fill up water trailer
- Continue clearing berm between DB-2 & DB-1
- Start constructing preliminary haul road
- Lay out TWTS footprint
- Demobilize tractor with side boom

DELIVERIES

- Sand – 3 loads => 88.7 tons
- AASHTO #8 gravel => 28.70
- Diesel

ISSUES:

- None

SUBCONTRACTORS:

- None



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/11/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 2
Total personnel onsite: 8
Weather: 58 – 78 Deg. F;

DAILY ACTIVITIES

- Began installation of wheel wash
 - Scraped ballast rock from footprint
 - Prepared subgrade and placed base material
 - Excavated, placed, and backfilled sump shroud
 - Assembled sump pump system
 - Place drip pan, tracks, ramps, side rails, & sprayers
- Prepared signage for air monitoring stations, fuel station, and haul routes
- Delineated ARCADIS air monitoring stations
- Installed signage at fuel station
- Surveyed surface features
- Demobilized skidsteer mower deck attachment
- Demobilized tractor with side boom mower
- Performed site walk with Clear Creek

PLANNED ACTIVITIES

- Plumb in water source
- Fill up water trailer
- Install haul route signage
- Finish installation of wheel wash
- Construct TWTS secondary containment
- Begin mobilization of TWTS equipment
- Begin dewatering DB-1 & DB-2

DELIVERIES

- Skidsteer bucket & forks

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (2)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/14/17 & 8/15/17

ENTACT personnel onsite: 6, 6
Subcontractor personnel onsite: 0, 5
Total personnel onsite: 6, 11
Weather: 52 – 73 Deg. F;

DAILY ACTIVITIES

- Finished installation of wheel wash
 - Installed panels for skid & tank
 - Attached motor and conveyor
 - Placed bridge plates between skids
 - Wired to components to control panel & generator
- Installed new speed limit and haul route signage
- Began TWTS secondary containment construction
 - Prepared subgrade
 - Placed subbase material
 - Laid out geotextile
 - Laid out polyethylene liner
 - Placed 3 – frac tanks
- LOTO and air gapped conductors for DB-2 & DB-1 pumps
- Finished clearing berm between DB-2 & DB-1
- Clear Creek mobilized & completed site orientation
- Electrical inspector inspected & approved generator connections

PLANNED ACTIVITIES

- Fill up water trailer
- Continue importing backfill material
- Delivery of 1st load of jersey barricades
- Delivery of 500 LF of HDPE pipe
- Begin installation of TWTS system
- Fill sand bags
- Fill bulk bags
- Begin dewatering DB-1



DELIVERIES

- 1 – 45' x 24' roll of polyethylene liner
- 1 – frac tank for TWTS
- 5 loads of quarry spalls
- 18 loads of saturated zone
- 50 – empty bulk bags

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (4)
- Titan Electric (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/16/17 - 8/18/17

ENTACT personnel onsite: 5, 5, 5
Subcontractor personnel onsite: 4, 4, 7
Total personnel onsite: 9, 9, 12
Weather: 54 – 73 Deg. F;

DAILY ACTIVITIES

- Filled & tested wheel wash
- Continued installation of site signage
- Dewatered DB-2 and began dewatering DB-1
- Rotated construction debris roll-off
- Removed & relocated debris from DB-2/DB-1 berm clearing
- Delineated lower pedestrian pathway
- Unloaded and placed TWTS equipment
- Wired & tested TWTS equipment
- Reclaimed ballast rock and began roughing in haul road
- Filled 25 bulk bags with sand

PLANNED ACTIVITIES

- N/A

DELIVERIES

- 20 – 12' jersey barricades
- 500 LF – 24" HDPE pipe
- 21 loads of saturated zone backfill
- 24 loads of berm fill
- TWTS equipment
- 42 LF of 6" steel casing
- HDPE fusion equipment

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (4)
- Titan Electric (3) – 8/18/17



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/21/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 0
Total personnel onsite: 6
Weather: 55 – 75 Deg. F

DAILY ACTIVITIES

- Filled 36 sand bags
- Received & inspected 320 excavator
- Continued dewatering DB-1
- Installed eye hooks on 12 jersey barricades
- Placed hay bales around TWTS containment perimeter
- Placed steel sleeve for TWTS discharge line
- Began construction of stockpile area

PLANNED ACTIVITIES

- Finish construction of stockpile pad
- Clear Creek to finish system installation
 - PSSR punch list items
 - Discharge line
- Install Sediment Resuspension Control System in Willow Creek
- Fused 24" HDPE
- Expose, cut, and cap storm drain lines

DELIVERIES

- 320 excavator
- Foam machine
- 4 – drums of foam

ISSUES:

- None

SUBCONTRACTORS:

- None

Viewing Ticket: 17327571



WASHINGTON ONE CALL

Ticket No:	17327571	2 FULL BUSINESS DAYS	
Original Call Date:	8/21/17	Time:	8:11 PM Op: webusr6
Work to Begin Date:	8/24/17	Time:	8:00 AM
Viewing Date:	8/21/17	Time:	8:15 PM Op: webusr6

Caller Information

Company:	ENTACT, LLC	Best Time:	
Contact Name:	MICHAEL CINCIRIPINI	Phone:	(412)417-8460
Alt. Contact:	CJ WHITE	Phone:	(337)515-2098
		Fax Phone:	
Email Address:	MCINCIRIPINI@ENTACT.COM		

Dig Site Information

Type of Work: EXCAVATION
Work Being Done For: PRIVATE ENTITY

Dig Site Location

State:	WA	County:	SNOHOMISH
Place:	EDMONDS		
Address:	11720		
Street:	UNOCO ROAD		
Intersecting Street:	PINE STREET		
Location of Work:	FORMER UNOCAL BULK FUEL TERMINAL		

Remarks:

AREA MARKED IN WHITE

Map Twp: 27N **Rng:** 3E **Sect-Qtr:** 23-SW,26-NW
Map Coord NW Lat: 47.8062157 **Lon:** -122.3916650 **SE Lat:** 47.8043853 **Lon:** -122.3886287



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/21/17

ENTACT personnel onsite: 7
Subcontractor personnel onsite: 3
Total personnel onsite: 10
Weather: 58 – 85 Deg. F

DAILY ACTIVITIES

- Continued dewatering DB-1
- Installed eye hooks on 8 jersey barricades
- Continued construction of stockpile area
 - Placed geotextile, liner, as well as portions of saturated zone material and hay bales
- Continued roughing in haul road
- Continued installation of TWTS
 - Began installation of discharge line
 - Installed walkover ramps
 - Posted signage
 - Completed flow meter testing
 - Performed sensor programming in PLC
- Relocated and set up fusion welding equipment
- Began fusing HDPE
 - 60 LF of 480 LF completed
- Held weekly one-team call

PLANNED ACTIVITIES

- Continue dewatering DB-1
- Finish construction of stockpile pad
 - Place remainder of saturated zone material
 - Place & stake hay bales
- Clear Creek to finish system installation
 - Complete discharge line & flow meter installation
 - Install flow direction labels
 - Secure remaining cam-locks
- Install Sediment Resuspension Control System in Willow Creek
- Continue fusing 24" HDPE
- Install Willow Creek bypass & dewater
- Finish roughing in haul road
- Expose, cut, and cap storm drain lines



DELIVERIES

- None

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (3)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/23/17 – 08/29/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 1-2
Total personnel onsite: 6
Weather: 53 – 88 Deg. F

DAILY ACTIVITIES

- Finished construction of stockpile pad
- Clear Creek finished PSSR punch list and discharge line
- Installed sediment resuspension control system in Willow Creek
- Installed north & south hydraulic isolation barriers in Willow Creek
 - Fused 420 LF of 24" HDPE pipe
 - Placed geotextile
 - Set pipe
 - Placed poly liner
 - Placed 34 bulk bags
 - Wrapped and fastened poly liner
 - Armored water side of barriers
- Continued installation of delineations and pathways
- Continued dewatering DB-1
- Received and inspected 335 excavator
- Received and inspected crane mats
- Began installation of DB-1 isolation barrier
 - Widened berm between DB-2 & DB-1
 - Placed geotextile
 - Placed poly liner
 - Placed 10 of 15 barriers

PLANNED ACTIVITIES

- Finish installation of DB-1 isolation barrier
 - Place 5 barricades
 - 2 on west end
 - 3 on east end
 - Wrap & fasten poly liner
 - Dewater isolated area
- Continue dewatering DB-1
- Finish dewatering DB-2
- Level off DB-2 while crowding remaining water & liner to west end
- Armor top of Willow Creek barriers



DELIVERIES

- 335 excavator
- Crane mats

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1-2)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 08/30/17 & 08/31/17

ENTACT personnel onsite: 6
Subcontractor personnel onsite: 1
Total personnel onsite: 7
Weather: 54 – 75 Deg. F

DAILY ACTIVITIES

- Demobilized fusion machine & generator
- Improved haul road & support zone delineations
- Completed installation of DB-1 isolation barrier
 - Placed 4 barricades
 - Wrapped & fastened poly liner
 - Dewatered isolated area
- Removed liner and pulled in DB-2 slopes
- Excavated, relayed, & stockpiled material from NW corner of DB-2
- Removed & laid out sediments from bottom of DB-2 to decant
- Transferred surface/ground/decant water to TWTS influent tank
- Placed aggregate between culverts and in pipe haunches at Willow Creek
- Supported fish screening operations
- Compliance audit close out

PLANNED ACTIVITIES

- Continue excavating, relaying, & stockpiling material from along DB-2/DB-1 berm
- Transfer surface/ground/decant water to TWTS influent tank
- Cover stockpiles and prepare site for holiday weekend
- Amor top of Willow Creek barriers
- Holiday weekend activity review & discussion
- Delivery of 185 CFM compressor

DELIVERIES

- None

ISSUES:

- SWA – Trucking supervisor had concerns with the conditions of the material for load-out

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/01/17

ENTACT personnel onsite: 4
Subcontractor personnel onsite: 0
Total personnel onsite: 4
Weather: 55 – 78 Deg. F

DAILY ACTIVITIES

- Continued excavating, relaying, & stockpiling material
- Pulled in DB-2 slopes and graded excavation area from East end to West end
- Transferred surface/ground/decant water to TWTS influent tank
- Installed 2nd set of sediment resuspension control system
- Dewatered Willow Creek isolation area and monitored infiltration rate
- Installed additional exclusion and contamination reduction zone signage
- Filled sand bags
- Covered stockpile
- Confirmed site visit by R Transport supervisor
- Held call to discuss plan for the holiday weekend and plan moving forward

PLANNED ACTIVITIES

- Observe and inspect site over weekend
- Dewater excavation on Tuesday and prepare for excavation and load out on Wednesday

DELIVERIES

- None

ISSUES:

- None

SUBCONTRACTORS:

- None



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/05/17 – 09/07/17

ENTACT personnel onsite: 3, 8, 7
Subcontractor personnel onsite: 1, 1, 2
Total personnel onsite: 4, 9, 10
Weather: 64 – 84 Deg. F

DAILY ACTIVITIES

- R Transport visited site and reviewed stockpiled material
- Fuel delivery
- Cleaned, inspected, & demobilized 307 & 320 excavators
- Improved exclusion zone signage
- Constructed access ramp to TWTS containment
- Armored top of Willow Creek isolation barriers
- Dewatered excavation
 - Transferred surface/ground/decant water to TWTS influent tank
 - Began transferring water to secondary settling tank
 - Influent transfer pump lost power
 - Discharge pump was relocated to continue transfer of water from influent tank to settling tank
 - Titan was called out to troubleshoot, repair, and re-energize primary transfer pump
- Uncovered stockpile and staged plastic & sand bags
- Continued excavating, relaying, & stockpiling material
- Provided material for confirmation sampling
 - 9/6/17 – A3 & A4
 - 9/7/17 – A-5 through A-8 and corresponding side wall samples
- Received, inspected, and calibrated 323 GPS excavator
- Levelled off truck loading area
- Widened haul road at 1st curve in lower yard
- Trained field personnel on wheel wash operation
- Processed super saturated soil by mixing with available dry soil
- Excavated along DB-1 excavation extent and placed berm fill to stop seepage of water
- Held conference call with one-team and Waste Management to discuss hauling operations

PLANNED ACTIVITIES

- Dewater excavation
 - Transfer surface/ground/decant water to TWTS influent tank
 - Leak test remainder of TWTS plumbing
 - Begin treatment of water



- Continue processing super saturated material
- Finish removal of soil to DB-1 extent and complete excavation of section 1
- Begin excavation of section 2
- Relay and stockpile material from excavation footprint
- Load & haul out stockpile material
 - Anticipate 3 trucks for 3 rounds
- Finish construction of ramp into stockpile containment
- Relocate stockpiled material from South bank of excavation to stockpile containment
- Provide material to ARCADIS for samples at grid locations:
 - B3 through B8
 - DB-1 sidewall locations corresponding with A3 & A4
- Begin backfilling section 1 along DB-1 extent
- Cover stockpiles and prepare site for weekend

DELIVERIES

- None

ISSUES:

- 9/5/17 – R Transport visited site and reviewed soil stockpile.
 - M. Bussanmas stated that he still wanted to line the truck/trailer beds due to concerns of soil sticking inside the bed.
- 9/6/17 – Waste Management communicated in the afternoon that they would not have any trucks available for 9/7/17.
- 9/7/17 – Influent tank transfer pump lost power.
 - Discharge pump was relocated to continue transferring water to secondary tank.
 - Titan Electric was called out to troubleshoot, repair, and re-energize primary pump.
 - Connections to pump and generator were checked & tightened.

SUBCONTRACTORS:

- Clear Creek (1)
- Titan Electric (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/08/17

ENTACT personnel onsite: 7
Subcontractor personnel onsite: 2
Total personnel onsite: 9
Weather: 57 – 68 Deg. F

DAILY ACTIVITIES

- Loaded & exported 5 loads of DB-2 soil
 - 106 CY of 7100 CY
 - 1.5% completed
- Finished removal of soil from section 1 along DB-1 extent
- Began backfill of section 1 along DB-1 extent
- Continued processing super saturated soil
- Provided material for sidewall samples corresponding with A3 – A5
- Constructed ramp into stockpile pad
- Water Management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Continued transferring water to settling tank
 - Began to push water through remainder of system and performed leak test
 - Cam-lock fitting for hose from settling tank discharge to pump was leaking
 - Gasket was replaced and blocking was installed under hose
 - Sand filter access port was leaking
 - Isolated and tightened bolts
 - Changed rotation on influent tank transfer pump
- Placed woven geotextile and quarry spalls at TWTS outfall
- Rental vendor repaired upper cab glass and performed troubleshooting of AC system on 320 long reach excavator
- Strung out oil booms along leading edge of backfill
- Covered stockpile and prepared site for the weekend

PLANNED ACTIVITIES

- Uncover stockpiled and stage plastic & sand bags
- Fuel delivery
- Load trucks & export DB-2 soil
 - Anticipate 5 trucks for 3 rounds
- Water Management
 - Transfer surface/ground/decant water to TWTS influent tank
 - Begin treatment of water
 - Provide water from clean water tank for sampling



- Relay, process, and stockpile material from DB-2
- Begin excavation of section 2
- Continue backfilling section 1
- Relocate stockpiled material from South bank of excavation to stockpile containment
- Provide material to ARCADIS for soil samples
- Relocate hydraulic release material to stockpile area
- Patch South isolation barrier in Willow Creek

DELIVERIES

- None

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (2)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/11/17 & 9/12/17

ENTACT personnel onsite: 8, 9
Subcontractor personnel onsite: 2, 1
Total personnel onsite: 10, 10
Weather: 49 – 77 Deg. F

DAILY ACTIVITIES

- Uncovered stockpile and staged plastic & sand bags
- Loaded, inspected, & exported 18 loads of DB-2 soil
 - 514 CY of 7100 CY
 - ~7% complete
- Excavation of section 1 completed
 - 1150 CY of 1150 CY
- Continued backfilling section 1
 - 410 CY of 1150 CY
 - ~36% complete
- Began excavation of section 2
 - 500 CY of 2425 CY
 - ~21% complete
- Continued relaying & processing super saturated soil
 - ~625 CY stockpiled on South bank of DB-1
 - ~300 CY of dry material from section 2 stockpiled on South bank of DB-1
- Relocated material from DB-2 footprint to stockpile containment
 - ~260 CY in containment
- Built ramps into East and West ends of excavation
- Provided material for sample grid locations B3 – B8 on 9/12/17
- Water Management
 - Placed bedding and cover material on TWTS discharge line
 - Transferred surface/ground/decant water to TWTS influent tank
 - Provided effluent water sample on 9/11/17
 - Received confirmation of clean sample on 9/12/17
 - Discharged 5667 gallons into Willow Creek
- Filled wheel wash
 - 9/11/17 - ~2000 gallons from hydrant on Pine St.
 - 9/12/17 - ~4000 gallons from TWTS discharge
- Constructed wheel wash solids discharge containment
- Relocated material from hydraulic release to stockpile area
- Rental vendor repaired AC system on 320 long reach excavation
- Patched South isolation barrier in Willow Creek and monitored infiltration during tidal flow



- Relocated material from DB-2 footprint to stockpile containment
- Received fuel delivery
- Filled sand bags
- Set up & created pre-seeded JSA for foam machine

PLANNED ACTIVITIES

- Load, inspect, & export DB-2 soil
 - Anticipate 4 trucks for 4 rounds
- Water Management
 - Transfer surface/ground/decant water to TWTS influent tank
 - Continue treating water
 - Discharge 15,933 gallons to Willow Creek
- Relay, process, and stockpile material from DB-2
- Continue excavation of section 2
- Provide material for sample grid locations A2, B2, C2, & D2
- Continue backfilling section 1
- Relocate material from DB-2 footprint to stockpile containment
- Import saturated zone material

DELIVERIES

- 9/12/17 – 185 CFM compressor

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1 – 2)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/13/17 - 9/15/17

ENTACT personnel onsite: 9, 9, 8
Subcontractor personnel onsite: 1, 1, 1
Total personnel onsite: 10, 10, 9
Weather: 44 – 75 Deg. F

DAILY ACTIVITIES

- Loaded, inspected, & exported 52 loads of DB-2 soil
 - 1,510 CY of 7,100 CY
 - ~21% complete
- Continue excavation of section 2
 - 1,000 CY of 2,425 CY
 - ~41% complete
- Began backfilling section 2
 - 250 CY of 2,425 CY
 - ~10% complete
- Began excavation of section 3
 - 500 CY of 1,980 CY
 - 25% complete
- Continued relaying, processing, & stockpiling super saturated soil
 - ~800 CY stockpiled on South bank of DB-2
 - ~260 CY stockpile in containment
- Provided material for samples
 - 9/13/17 – A2
 - 9/14/17 – B2 & C2
 - 9/15/17 – NW side slope, A1, & B1
- Sprayed water for dust suppression
 - 14 loads => 7,000 gallons
- Filled wheel wash
- Water Management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Provided effluent water sample on 9/14/17
 - Discharged ~44,530 gallons into Willow Creek
- Imported 32 loads of Saturated Zone material
- Maintained haul road
- Received fuel delivery
- Supported Clean Harbors in removal of LNAPL
- Received fuel delivery
- Covered stockpiles



PLANNED ACTIVITIES

- Load, inspect, & export DB-2 soil
 - Anticipate 4 WM trucks for 4 rounds
 - Anticipate 3 RTS trucks for 5 rounds
- Water Management
 - Backwash carbon vessels
 - Transfer surface/ground/decant water to TWTS influent tank
 - Continue treating water
 - Discharge 21,600 gallons to Willow Creek
- Relay, process, and stockpile material from DB-2
- Continue excavation of section 2
- Provide material for sample grid locations C1, D1, & corresponding side slope sample
- Continue backfilling section 2
- Relocate material from DB-2 footprint to stockpile containment

DELIVERIES

- Imported 32 loads of Saturated Zone material => ~1,015 TN

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/18/17

ENTACT personnel onsite: 9
Subcontractor personnel onsite: 1
Total personnel onsite: 10
Weather: 50 – 62 Deg. F

DAILY ACTIVITIES

- Loaded, inspected, & exported 11 loads of DB-2 soil
 - 1,720 CY of 7,100 CY
 - ~24% complete
- Continue excavation of section 2
 - 1,500 CY of 2,425 CY
 - ~62% complete
- Began backfilling section 2
 - 660 CY of 2,425 CY
 - ~27% complete
- Uncovered & re-covered stockpiles as necessary
- Continued relaying, processing, & stockpiling super saturated soil
 - ~1,500 CY stockpiled on South bank of DB-2
 - ~260 CY stockpile in containment
- Provided material for samples
 - C1, D1, and D2
- Filled wheel wash
- Water Management
 - Backwashed carbon vessels
 - Transferred surface/ground/decant water to TWTS influent tank
 - Discharged ~18,635 gallons into Willow Creek
- Received and inspected CS44 roller
- Imported 22 loads of Saturated Zone material
- Maintained haul road
- Received fuel delivery

PLANNED ACTIVITIES

- Load, inspect, & export DB-2 soil
 - Anticipate 3 WM trucks for 4 rounds
 - Anticipate 4 RTS trucks for 4 rounds
- Water Management
 - Transfer surface/ground/decant water to TWTS influent tank
 - Continue treating water
 - Discharge 21,600 gallons to Willow Creek



- Relay, process, and stockpile material from DB-2
- Continue excavation of section 2
- Provide material for sample grid locations E1, E2, F1, F2, & corresponding side slope samples
- Continue backfilling section 2
- Relocate material from DB-2 footprint to stockpile containment

DELIVERIES

- Imported 22 loads of Saturated Zone material => ~658 TN

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/19/17 & 9/20/17

ENTACT personnel onsite: 7, 9
Subcontractor personnel onsite: 1
Total personnel onsite: 8, 10
Weather: 48 – 60 Deg. F

DAILY ACTIVITIES

- Loaded, inspected, & exported 55 loads of DB-2 soil
 - 2,645 CY of 7,100 CY
 - ~37% complete
- Continued excavation of section 2
 - 2,150 CY of 2,425 CY
 - ~89% complete
- Continued excavation of section 3
 - 990 CY of 1,980 CY
 - ~50% complete
- Total excavation
 - 4,290 CY of 8,700 CY
 - ~50% complete
- Continued backfilling section 2
 - 1,090 CY of 2,425 CY
 - ~45% complete
- Began backfilling section 3
 - 100 CY of 1,980 CY
 - ~5% complete
- Total backfill
 - 1,600 CY of 8,200 CY
 - ~20% complete
- Uncovered & re-covered stockpiles as necessary
- Continued relaying, processing, & stockpiling super saturated soil
 - ~1,650 CY stockpiled on South bank of DB-2
 - ~260 CY stockpile in containment
- Provided material for samples
 - 9/19/17 – E1, E2, & B10
 - 9/20/17 – F1, SW side slope, & NW side slope
- Excavated out NW side slope where failed sample came from
- Filled wheel wash



- Water Management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Removed rain accumulation from low corner of containment
 - Discharged ~22,000 gallons into Willow Creek
- Imported backfill
 - Saturated Zone – 17 loads
 - Berm Fill – 8 loads
- Maintained haul road
- Repaired site delineations

PLANNED ACTIVITIES

- Load, inspect, & export DB-2 soil
 - Anticipate 6 R Transport trucks for 4 rounds
 - Anticipate 4 RTS trucks for 5 rounds
- Water Management
 - Transfer surface/ground/decant water to TWTS influent tank
 - Continue treating water
 - Discharge 21,600 gallons to Willow Creek
- Relay, process, and stockpile material from DB-2
- Finish excavation of section 2
- Continue excavation of section 3
- Begin excavation of section 4
- Provide material for sample grid locations F2, C3, C4, & C5
- Continue backfilling section 2 & 3
- Import backfill material
- Relocate material from DB-2 footprint to stockpile containment

DELIVERIES

- Imported 25 loads of backfill => 1,045 TN

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/21/17 & 9/22/17

ENTACT personnel onsite: 9, 7
Subcontractor personnel onsite: 1
Total personnel onsite: 10, 8
Weather: 50 – 64 Deg. F

DAILY ACTIVITIES

- Loaded, inspected, & exported 62 loads of DB-2 soil
 - 3,668 CY of 7,100 CY
 - ~52% complete
- Completed excavation of section 2
 - 2,425 CY of 2,425 CY
 - 100% complete
- Completed excavation of section 3
 - 1,980 CY of 1,980 CY
 - ~100% complete
- Total excavation
 - 5,565 CY of 8,700 CY
 - ~64% complete
- Uncovered & re-covered stockpiles as necessary
- Continued relaying, processing, & stockpiling super saturated soil
 - ~1,225 CY stockpiled on South bank of DB-2
 - ~500 CY stockpile in containment
- Provided material for samples
 - 9/21/17 – E2 & F2
 - 9/22/17 – C3, C4, C5, C6, C7, & C8
- Filled wheel wash
- Water Management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Discharged ~20,000 gallons into Willow Creek
- Imported backfill
 - Saturated Zone – 46 loads
- Maintained haul road
- Relocated material from DB-2 stockpile to containment stockpile
- Supported Clean Harbors in the removal of LNAPL

PLANNED ACTIVITIES

- Load, inspect, & export DB-2 soil
 - Anticipate 4 RTS trucks for 3 rounds



- Water Management
 - Transfer surface/ground/decant water to TWTS influent tank
 - Continue treating water
 - Discharge 21,600 gallons to Willow Creek
- Relay, process, and stockpile material from DB-2
- Begin excavation of section 4
- Provide material for sample grid locations – E3, D3, E4, & D4
- Continue backfilling section 2 & 3
- Import backfill material
- Relocate material from DB-2 footprint to stockpile containment

DELIVERIES

- Imported 46 loads of backfill => 1,380 TN

ISSUES:

- Flat tire on R Transport truck Friday afternoon

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/23/17

ENTACT personnel onsite: 5
Subcontractor personnel onsite: 0
Total personnel onsite: 5
Weather: 53 – 66 Deg. F

DAILY ACTIVITIES

- Loaded, inspected, & exported 11 loads of DB-2 soil
 - 3,970 CY of 7,100 CY
 - ~56% complete
- Pre-loaded RTS trucks
- Covered stockpiles
- Imported & stockpiled backfill
 - Saturated Zone – 11 loads
 - Vadose Zone - 11 loads
 - Berm Fill - 1 load

PLANNED ACTIVITIES

- Remove Willow Creek Bypass
- Load, inspect, & export trucks
 - Anticipate 4 RTS trucks for 5 rounds
 - Anticipate 6 R Transport trucks for 4 rounds
- Water Management
 - Transfer surface/ground/decant water to TWTS influent tank
 - Continue treating water
 - Discharge ~20,000 gallons to Willow Creek
- Continue backfilling section 2 & 3
- Relay, process, and stockpile material from DB-2
- Begin excavation of section 4
- Provide material for NW slope sample

DELIVERIES

- 23 loads of backfill
 - Saturated Zone – 11 loads => 330 TN
 - Vadose Zone – 11 loads => 330 TN
 - Berm Fill – 1 load => 30 TN

ISSUES:

- Flat tire on RTS truck

SUBCONTRACTORS:

- None



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/25/17

ENTACT personnel onsite: 8
Subcontractor personnel onsite: 1
Total personnel onsite: 9
Weather: 55 – 63 Deg. F; Light rain in AM

DAILY ACTIVITIES

- Loaded, inspected, & exported 28 loads of DB-2 soil
 - 4,445 CY of 7,100 CY
 - ~63% complete
- Pre-loaded RTS trucks
- Received & inspected D6N dozer
- Dewatered Willow Creek and removed Bypass system
- Chased impacted material on NW corner, provided sample, and backfilled
- Continued backfilling section 2
 - 1,390 CY of 2,425 CY
 - ~57% complete
- Continued backfilling section 3
 - 200 CY of 1,980 CY
 - ~10% complete
- Total backfill
 - 2,000 CY of 9,800 CY
 - ~20% complete
- Water management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Discharged ~20,000 gallons into Willow Creek
- Filled wheel wash
- Removed rain accumulation from TWTS containment
- Fuel delivery

PLANNED ACTIVITIES

- Load, inspect, & export trucks
 - Anticipate 4 RTS trucks for 5 rounds
 - Anticipate 6 R Transport trucks for 4 rounds
- Water Management
 - Transfer surface/ground/decant water to TWTS influent tank
 - Continue treating water
 - Discharge ~20,000 gallons to Willow Creek
- Continue backfilling section 2 & 3
- Relay, process, and stockpile material from DB-2



- Begin excavation of section 4
- Provide material for sample grid locations – D3-D8
- Support Clean Harbors in LNAPL removal
- Relocate material from DB-2 footprint to stockpile containment

DELIVERIES

- D6N dozer

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/26/17 – 9/28/17

ENTACT personnel onsite: 7, 8, 7
Subcontractor personnel onsite: 1
Total personnel onsite: 8, 9, 8
Weather: 54 – 75 Deg. F

DAILY ACTIVITIES

- Loaded, inspected, & exported 87 loads of DB-2 soil
 - 5,885 CY of 7,100 CY
 - ~83% complete
- Pre-loaded RTS trucks
- Began excavation of section 4
 - 1,000 CY of 1,550 CY
 - ~65% complete
- Provided material for samples
 - 9/26/17 – E2
 - 9/27/17 – D4-D8
- Total excavation
 - 6,760 CY of 8,550 CY
 - ~79% complete
- Continued backfilling section 2
 - 1,720 CY of 2,425 CY
 - ~70% complete
- Continued backfilling section 3
 - 200 CY of 1,980 CY
 - ~10 % complete
- Total backfill
 - 2,430 CY of 9,800 CY
 - ~25% complete
- Water management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Continued treating water
 - Discharged ~30,000 gallons into Willow Creek
- Filled wheel wash
- Removed rain accumulation from TWTS containment
- Supported Clean Harbors in removal of 6 loads of LNAPL
- Imported 15 loads of vadose zone material
- NC Machinery mechanic repaired 335 excavator



PLANNED ACTIVITIES

- Load, inspect, & export trucks
 - Anticipate 4 RTS trucks for 4 rounds
 - Anticipate 2-3 R Transport trucks for 4 rounds
- Water Management
 - Transfer surface/ground/decant water to TWTS influent tank
 - Continue treating water
 - Discharge ~20,000 gallons to Willow Creek
- Continue backfilling section 2 & 3
- Begin backfilling section 4
- Relay, process, and stockpile material from DB-2
- Complete excavation of section 4
- Provide material for sample grid locations – E3 – E8

DELIVERIES

- Vadose zone

ISSUES:

- Fuel leak on 335 excavator on 9/26/17

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 09/29/17

ENTACT personnel onsite: 8
Subcontractor personnel onsite: 1
Total personnel onsite: 9
Weather: 54 – 68 Deg. F; Rain throughout AM

DAILY ACTIVITIES

- Loaded, inspected, & exported 29 loads of DB-2 soil
 - 6,385 CY of 7,100 CY
 - ~90% complete
- Pre-loaded RTS trucks
- Continued excavation of section 4
 - 1,450 CY of 1,550 CY
 - ~94% complete
- Provide material for grid locations E3, E4, E5, & E6
- Total excavation
 - 7,010 CY of 8,550 CY
 - ~82% complete
- Continued backfilling section 3
 - 400 CY of 1,980 CY
 - ~20% complete
- Total backfill
 - 2,930 CY of 9,800 CY
 - ~30% complete
- Water management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Continued treating water
 - Discharged ~11,000 gallons into Willow Creek
- Supported Clean Harbors in removal of 2 loads of LNAPL
- Imported 5 loads of vadose zone material
- Widened haul road for load out from containment stockpile

PLANNED ACTIVITIES

- Load, inspect, & export trucks
 - Anticipate 4 RTS trucks for 4 rounds
 - Anticipate 3-4 R Transport trucks for 4 rounds
- Remove DB-1 isolation barrier
- Water Management
 - Transfer surface/ground/decant water to TWTS influent tank
 - Continue treating water



- Discharge ~20,000 gallons to Willow Creek
- Continue backfilling section 1 and 3
- Relay, process, and stockpile material from DB-2
- Complete excavation of section 4
- Complete excavation of section 5
 - Stockpile vadose zone material placed in 2008
- Provide material for sample grid locations – E7
- Support Clean Harbors in removal of LNAPL

DELIVERIES

- Vadose zone

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 10/02/17

ENTACT personnel onsite: 8
Subcontractor personnel onsite: 1
Total personnel onsite: 9
Weather: 45 – 60 Deg.

DAILY ACTIVITIES

- Loaded, inspected, & exported 37 loads of DB-2 soil
 - 7,075 CY of 7,910 CY
 - ~90% complete
- Pre-loaded RTS trucks
- Completed excavation of section 4
 - 1,550 CY of 1,550 CY
 - ~100% complete
- Provide material for grid location E7
- Completed excavation of section 5
 - Stockpiled and sampled
- Total excavation
 - 8,550 CY of 8,550 CY
 - ~100% complete
- Continued backfilling section 3
 - 550 CY of 1,980 CY
 - ~28% complete
- Total backfill
 - 3,080 CY of 9,800 CY
 - ~31% complete
- Placed new booms along backfill
- Water management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Continued treating water
 - Discharged ~12,000 gallons into Willow Creek
- Supported Clean Harbors in removal of 2 loads of LNAPL
- Imported 12 loads of vadose zone material
- Relocated impacted material to containment

PLANNED ACTIVITIES

- Load, inspect, & export trucks
 - Anticipate 4 RTS trucks for 4 rounds
 - Anticipate 2-3 R Transport trucks for 4 rounds
- Remove DB-1 isolation barrier



- Water Management
 - Dewater open excavation
 - Continue treating water
 - Discharge ~20,000 gallons to Willow Creek
- Continue backfilling section 1 and 3
- Support Clean Harbors in removal of LNAPL
- Import vadose zone material

DELIVERIES

- Vadose zone

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 10/03/17

ENTACT personnel onsite: 8
Subcontractor personnel onsite: 1
Total personnel onsite: 9
Weather: 45 – 66 Deg.

DAILY ACTIVITIES

- Loaded, inspected, & exported 28 loads of DB-2 soil
 - 7,600 CY of 7,910 CY
 - ~96% complete
- Continued backfilling section 1
 - 610 CY of 1,150 CY
 - ~53% complete
- Continued backfilling section 3
 - 750 CY of 1,980 CY
 - ~38% complete
- Total backfill
 - 3,480 CY of 9,800 CY
 - ~36% complete
- Placed new booms along backfill
- Water management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Continued treating water
 - Discharged ~12,000 gallons into Willow Creek
- Supported Clean Harbors in removal of 2 loads of LNAPL
- Imported 19 loads of vadose zone material
- Removed DB-1 isolation barrier
- Staged barriers for demobilization
- Filled wheel wash

PLANNED ACTIVITIES

- Load, inspect, & export trucks
 - Anticipate 2-3 R Transport trucks for 4 rounds
- Water Management
 - Dewater open excavation
 - Continue treating water
 - Discharge ~20,000 gallons to Willow Creek
- Continue backfilling section 1 and 3
- Support Clean Harbors in removal of LNAPL
- Import vadose zone material



- Demobilize 320 long reach excavator
- Load out and demobilize 1 load of barriers
- Remove containment & restore stockpile area

DELIVERIES

- Vadose zone

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 10/04/17

ENTACT personnel onsite: 8
Subcontractor personnel onsite: 1
Total personnel onsite: 9
Weather: 46 – 64 Deg.

DAILY ACTIVITIES

- Loaded, inspected, & exported 15 loads of DB-2 soil
 - 7,910 CY of 8,050CY
 - ~98% complete
- Continued backfilling
 - 4,850 CY of 9,800 CY
 - ~49% complete
- Water management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Continued treating water
 - Discharged ~9,100 gallons into Willow Creek
- Supported Clean Harbors in removal of 2 loads of LNAPL
- Removed booms from excavation
- Imported 21 loads of backfill material
 - 11,175 TN of 14,150 TN
 - ~79% of material imported
- Removed booms from excavation
- Tested DB-1 pump
- Exposed end of DB-1 electrical conduit
- Inspected & demobilized 320 long reach excavator

PLANNED ACTIVITIES

- Load, inspect, & export remainder of DB-2 material
- Water Management
 - Dewater open excavation
 - Continue treating water
 - Discharge ~10,000 gallons to Willow Creek
- Continue backfilling
- Import saturated zone material
- Load out and demobilize 1 load of barriers
- Remove containment & restore stockpile area
- Trench for installation of new conduit
- Drain wheel wash
- Install pump & platform in DB-1



DELIVERIES

- 6 loads of vadose zone
- 15 loads of saturated zone

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 10/05/17

ENTACT personnel onsite: 8
Subcontractor personnel onsite: 1
Total personnel onsite: 9
Weather: 44 – 69 Deg.

DAILY ACTIVITIES

- Loaded, inspected, & exported 8 loads of DB-2 soil
 - 8,050 CY of 8,100CY
 - ~99% complete
- Continued backfilling
 - 5,850 CY of 9,800 CY
 - ~60% complete
- Water management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Continued treating water
 - Discharged ~18,000 gallons into Willow Creek
- Imported 21 loads of vadose zone material
 - 12,418 TN of 14,150 TN
 - ~88% of material imported
- Built aggregate pad in SW corner of DB-1 for pump rack
- Placed DB-1 pump & rack
- Trench for DB-1 pump conduit
- Inspected & demobilized 323 excavator
- Received & staged plants for Willow Creek Revegetation
- Loaded dumpster with liner, fencing

PLANNED ACTIVITIES

- Load, inspect, & export remainder of DB-2 material
- Water Management
 - Dewater open excavation
 - Continue treating water
 - Discharge ~20,000 gallons to Willow Creek
- Continue backfilling
- Import saturated zone material
- Load out and demobilize 1 load of barriers
- Load out and demobilize crane mats
- Remove containment & restore stockpile area
- Remove delineations from around wheel wash
- Install conduit, cable, and floats for DB-1 pump



- Wire & energize DB-1 pump

DELIVERIES

- Saturated zone

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)



CVX300-17 DAILY REPORT
DB-2 Excavation
Former Unocal Bulk Fuel Terminal

Date: 10/06/17

ENTACT personnel onsite: 8
Subcontractor personnel onsite: 3
Total personnel onsite: 11
Weather: 48 – 61 Deg.

DAILY ACTIVITIES

- Loaded, inspected, & exported 4 loads of DB-2 soil
 - 8,100 CY of 8,100CY
 - ~100% complete
- Continued backfilling open excavation
 - 6,580 CY of 9,800 CY
 - ~67% complete
- Water management
 - Transferred surface/ground/decant water to TWTS influent tank
 - Continued treating water
 - Discharged ~16,000 gallons into Willow Creek
- Imported 12 loads of vadose zone material
 - 12,418 TN of 14,150 TN
 - ~88% of material imported
- Demobilize crane mats
- Installed conduit, cable, floats, & switch panel for DB-1 pump
- Removed stockpile containment
- Scraped up and loaded out remaining impacted materials
- Removed delineations from around wheel wash
- Drained wheel wash
- Began removal of fuel station

PLANNED ACTIVITIES

- Water Management
 - Dewater open excavation
 - Treat and discharge remainder of water into Willow Creek
- Continue backfilling
- Begin installation of fencing
- Dismantle wheel wash
- Drain 4" pump/hose and relocate to laydown area
- Receive 10" storm drain pipe
- Import saturated & vadose zone material
- Load out and demobilize barriers



DELIVERIES

- Saturated zone

ISSUES:

- None

SUBCONTRACTORS:

- Clear Creek (1)
- Titan Electric (2)

APPENDIX C

Permits





REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

SEP - 2 2015

Regulatory Branch

Ms. Kim Jolitz
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, California 94583

Reference: NWS-2015-392
Union Oil Company of
California
(Edmonds Bulk Fuel
Terminal Interim Action)

Dear Ms. Jolitz:

We have reviewed your application to install two temporary coffer dams composed of 188 cubic yards of certified clean fill material each and two temporary 24-inch-diameter culvert pipes in Willow Creek near Edmonds, Snohomish County, Washington. Based on the information you provided to us, Nationwide Permit (NWP) 33, *Temporary Construction, Access, and Dewatering* (Federal Register February 21, 2012, Vol. 77, No. 34), authorizes your proposal as depicted on the enclosed drawings dated April 7, 2015.

In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP 33, Terms and Conditions*.

We have reviewed your project pursuant to the requirements of the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act and the National Historic Preservation Act. We have determined this project complies with the requirements of these laws provided you comply with all of the permit general and special conditions.

The authorized work complies with the Washington State Department of Ecology's (Ecology) Water Quality Certification and the Coastal Zone Management Act requirements for this NWP. No further coordination with Ecology is required.

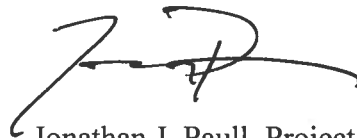
We have prepared and enclosed a *Preliminary Jurisdictional Determination (JD)* dated August 7, 2015, which is a written indication that wetlands and waterways within your project area may be waters of the U.S. Such waters will be treated as jurisdictional waters of the U.S. for purposes of computation of impact area and compensatory mitigation requirements

associated with your permit application. If you believe the Preliminary JD is inaccurate, you may request an Approved JD, which is an official determination regarding the presence or absence of waters of the U.S. If one is requested, please be aware that we may require the submittal of additional information to complete an approved JD and work authorized in this letter may not occur until the approved JD has been finalized.

Our verification of this NWP authorization is valid until March 18, 2017, unless the NWP is modified, reissued, or revoked prior to that date. If the authorized work has not been completed by that date and you have commenced or are under contract to commence this activity before March 18, 2017, you will have until March 18, 2018, to complete the activity under the enclosed terms and conditions of this NWP. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. You must also obtain all local, State, and other Federal permits that apply to this project.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form. Thank you for your cooperation during the permitting process. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Contact Us." A copy of this letter without enclosures will be furnished to Mr. Scott Zorn, ARCADIS U.S., Inc., 1100 Olive Way, Suite 800, Seattle, Washington 98101. If you have any questions, please contact me at jonathan.j.paull@usace.army.mil or (206) 764-6071.

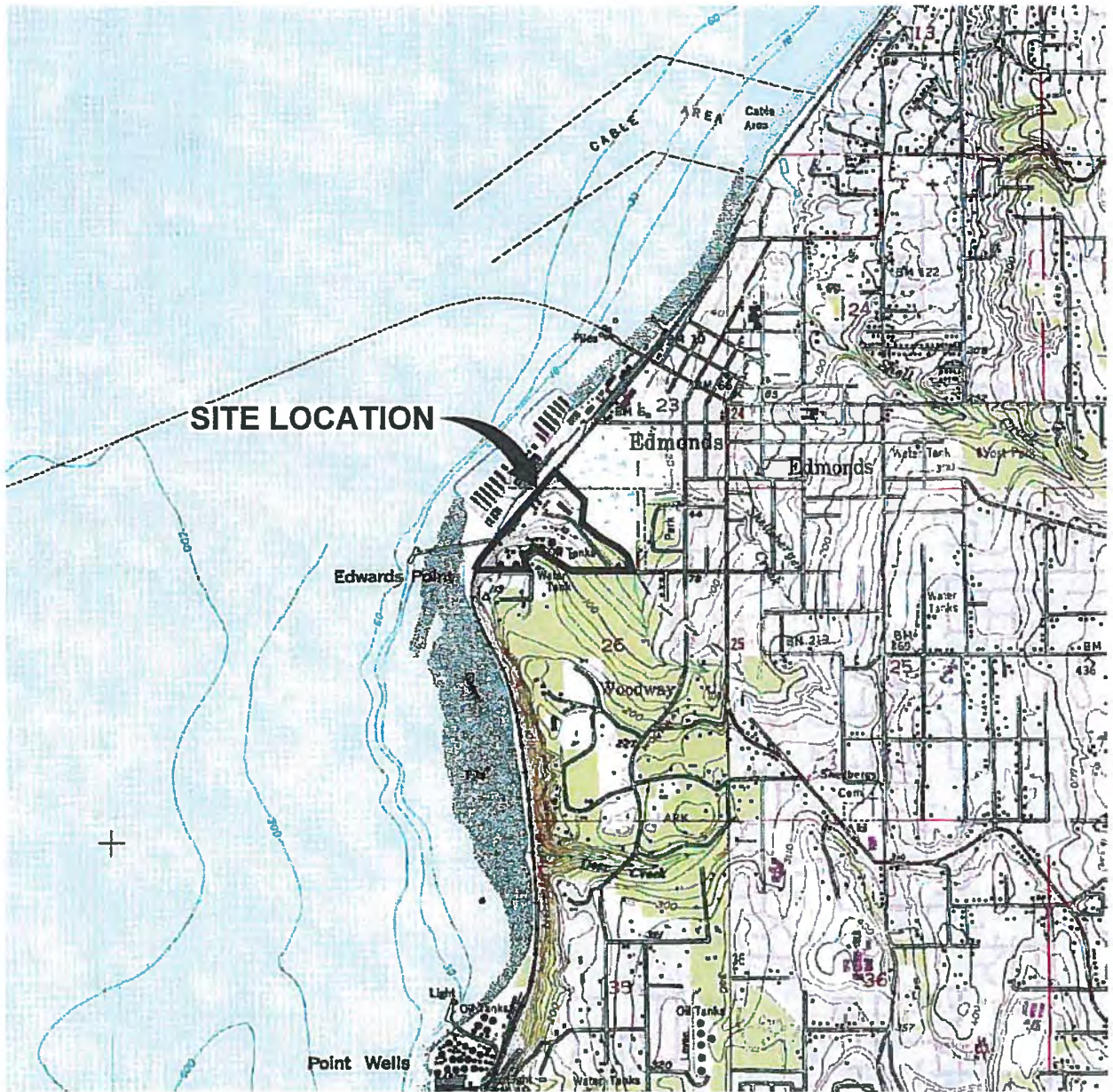
Sincerely,

A handwritten signature in black ink, appearing to read 'J. Paull', with a stylized flourish extending to the right.

Jonathan J. Paull, Project Manager
Regulatory Branch

Enclosures

CITY:SYRACUSE,NY_DWG:GROUP:IMDVICAD_DR:P:LISTER,R,PETRIE_PMS:ZORN_TMP:GHATPANDE_TRA:APATEL_LYR:(OPTIONAL)-OFF:REF
I:\arcad\proj\B004532\ARPA\AS32-FIG-1.dwg_LAYOUT:1_SAVED:4/7/2015 11:54 AM_ACADVER:18.1S(LMS TECH)_PAGESETUP:1_PLOTSTYLETABLE:ARCADIS.CTB_PLOTTED:4/7/2015 11:55 AM_BY:HUTCHINS-WASS,TABITHA
XREFS:IMAGES:PROJECTNAME:Edmond-E.tif Edmond-W.tif



REFERENCE: USGS QUADS., 7.5 MIN. SERIES (TOPOGRAPHIC) - EDMONDS EAST, WASH. AND EDMONDS WEST, WASH.

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0 0.5 1.0

Approximate Scale: 1"=0.5 Miles



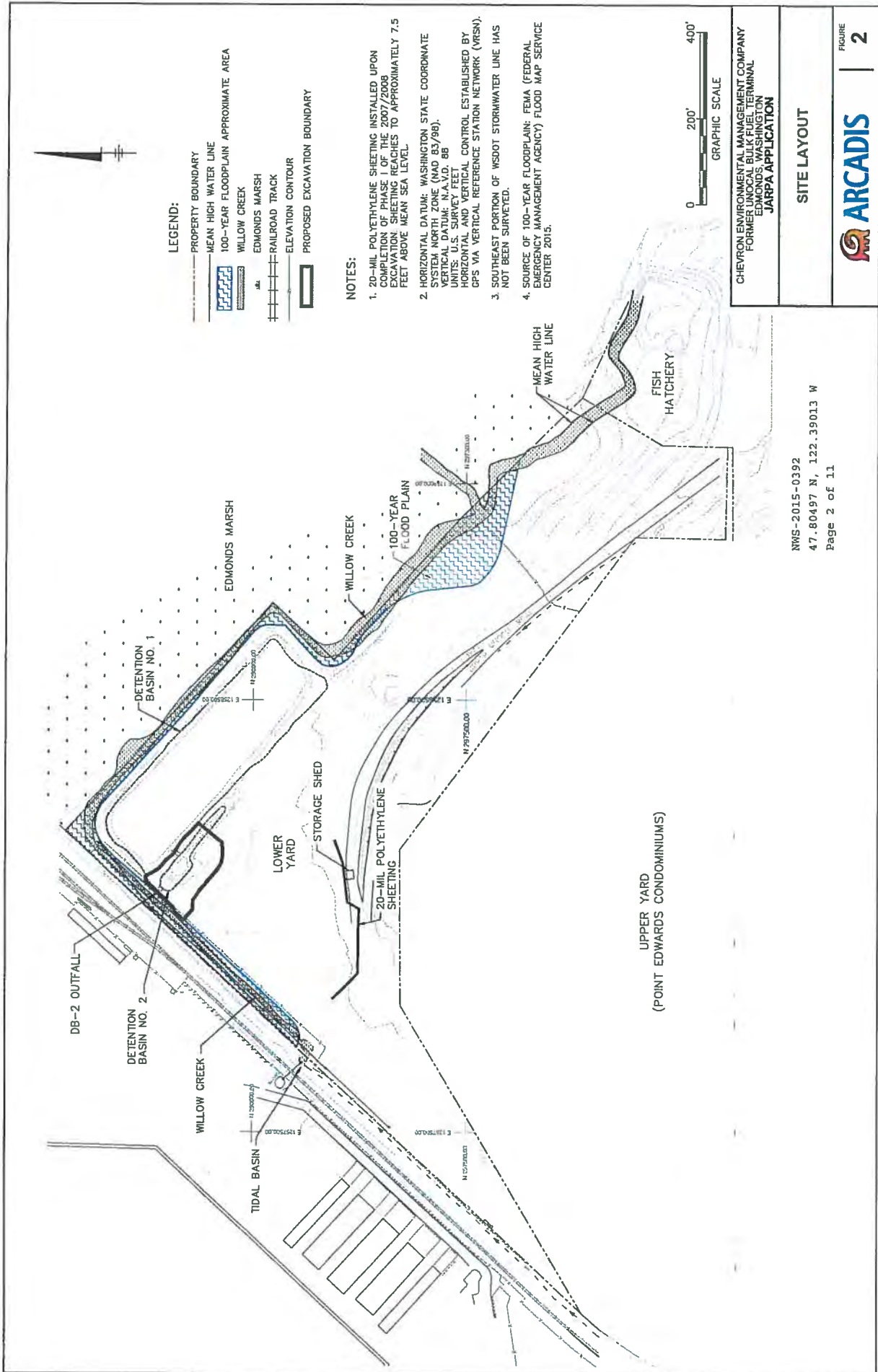
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
FORMER UNOCAL BULK FUEL TERMINAL
EDMONDS, WASHINGTON
JARPA APPLICATION

SITE LOCATION MAP



FIGURE

1

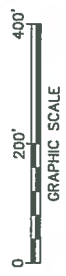


LEGEND:

- PROPERTY BOUNDARY
- MEAN HIGH WATER LINE
- ▨ 100-YEAR FLOODPLAIN APPROXIMATE AREA
- ▨ WILLOW CREEK
- ▨ EDMONDS MARSH
- RAILROAD TRACK
- ... ELEVATION CONTOUR
- ▭ PROPOSED EXCAVATION BOUNDARY

NOTES:

1. 20-MIL POLYETHYLENE SHEETING INSTALLED UPON COMPLETION OF PHASE I OF THE 2007/2008 EXCAVATION SHEETING REACHES TO APPROXIMATELY 7.5 FEET ABOVE MEAN SEA LEVEL.
2. HORIZONTAL DATUM: WASHINGTON STATE COORDINATE SYSTEM NORTH ZONE (NAD 83/99). VERTICAL DATUM: N.A.V.D. 88. HORIZONTAL AND VERTICAL CONTROL ESTABLISHED BY GPS VIA VERTICAL REFERENCE STATION NETWORK (VRSN). 3. SOUTHEAST PORTION OF WSDOT STORMWATER LINE HAS NOT BEEN SURVEYED.
4. SOURCE OF 100-YEAR FLOODPLAIN: FEMA (FEDERAL EMERGENCY MANAGEMENT AGENCY) FLOOD MAP SERVICE CENTER 2015.



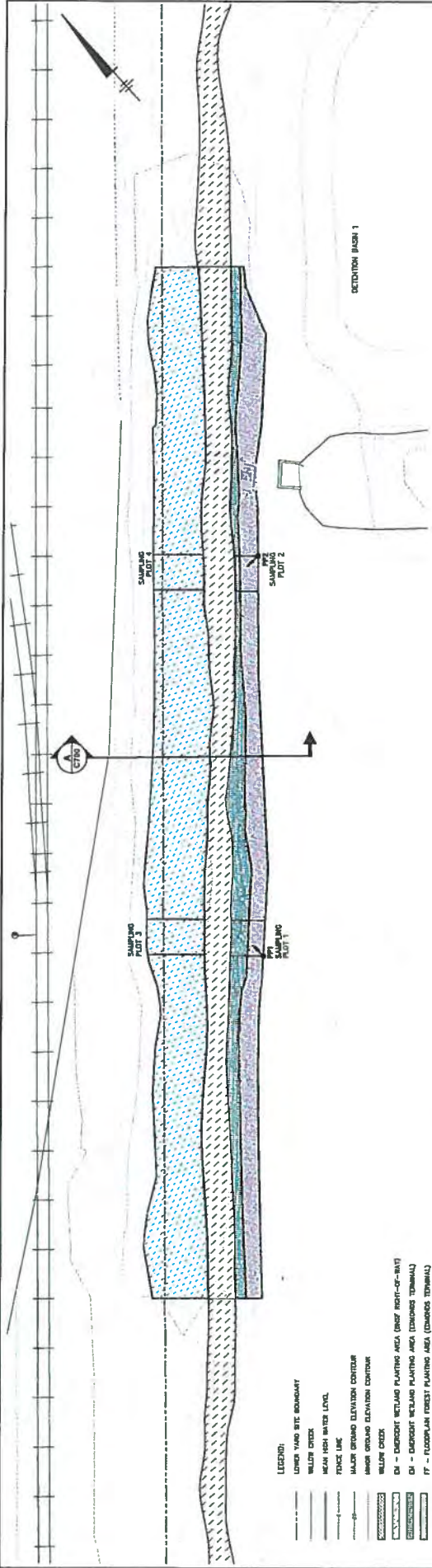
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
FORMER UNOCAL BULK FUEL TERMINAL
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SITE LAYOUT



FIGURE
2

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EM - EMERGENT WETLAND (CREEK MARGIN - BNSF RIGHT-OF-WAY) 0.218 ACRES

SPECIES	COMMON NAME	NUMBER	SIZE	DENSITY (1/ACRE)	SPACING
1	<i>Carex obovata</i>	1,200	BARE ROOT	2,800	3.0' O.C.
2	<i>Juncus roemerianus</i>	300	BARE ROOT	800	7.5' O.C.
3	<i>Sagittaria arifolia</i>	350	BARE ROOT	800	7.5' O.C.
4	<i>Sparganium angustifolium</i>	250	BARE ROOT	800	8.5' O.C.

EM - EMERGENT WETLAND (CREEK MARGIN - EDMONDS TERMINAL) 0.043 ACRES

SPECIES	COMMON NAME	NUMBER	SIZE	DENSITY (1/ACRE)	SPACING
1	<i>Carex obovata</i>	400	BARE ROOT	4,850	3.0' O.C.
2	<i>Juncus roemerianus</i>	150	BARE ROOT	1,750	5' O.C.
3	<i>Sagittaria arifolia</i>	100	BARE ROOT	1,200	8' O.C.
4	<i>Sparganium angustifolium</i>	100	BARE ROOT	1,200	8' O.C.

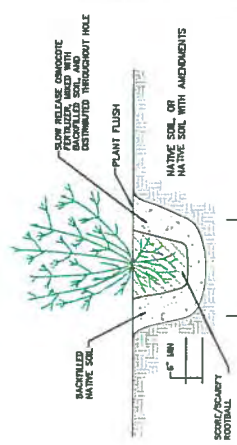
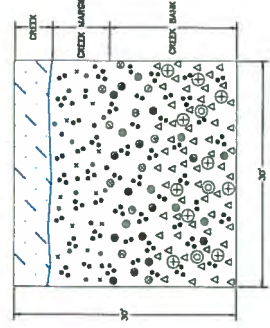
FF - FLOODPLAIN FOREST (CREEK BANK - EDMONDS TERMINAL) 0.07 ACRES

TREES	COMMON NAME	NUMBER	SIZE	DENSITY (1/ACRE)	SPACING
1	<i>Alnus incana</i>	51	1 GAL	725	7.6' O.C.
2	<i>Populus deltoides var. deltoides</i>	18	1 GAL	255	13' O.C.
3	<i>Salix glauca</i>	51	1 GAL	725	7.6' O.C.
4	<i>Salix roemeriana</i>	51	1 GAL	725	7.6' O.C.
5	<i>Chamaecyparis thyoides</i>	42	1 GAL	600	8.5' O.C.
6	<i>Larix laricina</i>	27	1 GAL	400	10.5' O.C.

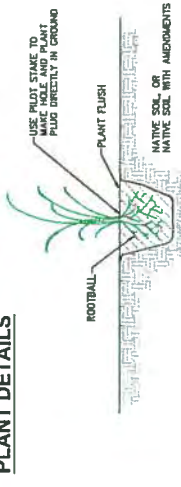
GRASS/COVER

SPECIES	COMMON NAME	NUMBER	SIZE	DENSITY (1/ACRE)	SPACING
1	<i>Carex obovata</i>	800	BARE ROOT	3,700	2.8' O.C.
2	<i>Deschampsia cespitosa</i>	810	BARE ROOT	3,800	2.7' O.C.

- LEGEND:**
- UNCLER YARD SITE BOUNDARY
 - WETLAND CREEK
 - MEAN HIGH WATER LEVEL
 - FENCE LINE
 - MAJOR GROUND ELEVATION CONTOUR
 - MINOR GROUND ELEVATION CONTOUR
 - WETLAND CREEK
 - EM - EMERGENT WETLAND PLANTING AREA (BEST PRACTICE - B1V)
 - EM - EMERGENT WETLAND PLANTING AREA (EDMONDS TERMINAL)
 - FF - FLOODPLAIN FOREST PLANTING AREA (EDMONDS TERMINAL)



SHRUB PLANTING DETAIL
NOT TO SCALE



EMERGENT GRASSES PLANTING DETAIL
NOT TO SCALE

SCALES AS INDICATED

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
FORMER UNOCAL BULK FUEL TERMINAL
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HISTORIC (2008) RESTORATION PLAN

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FIGURE
3

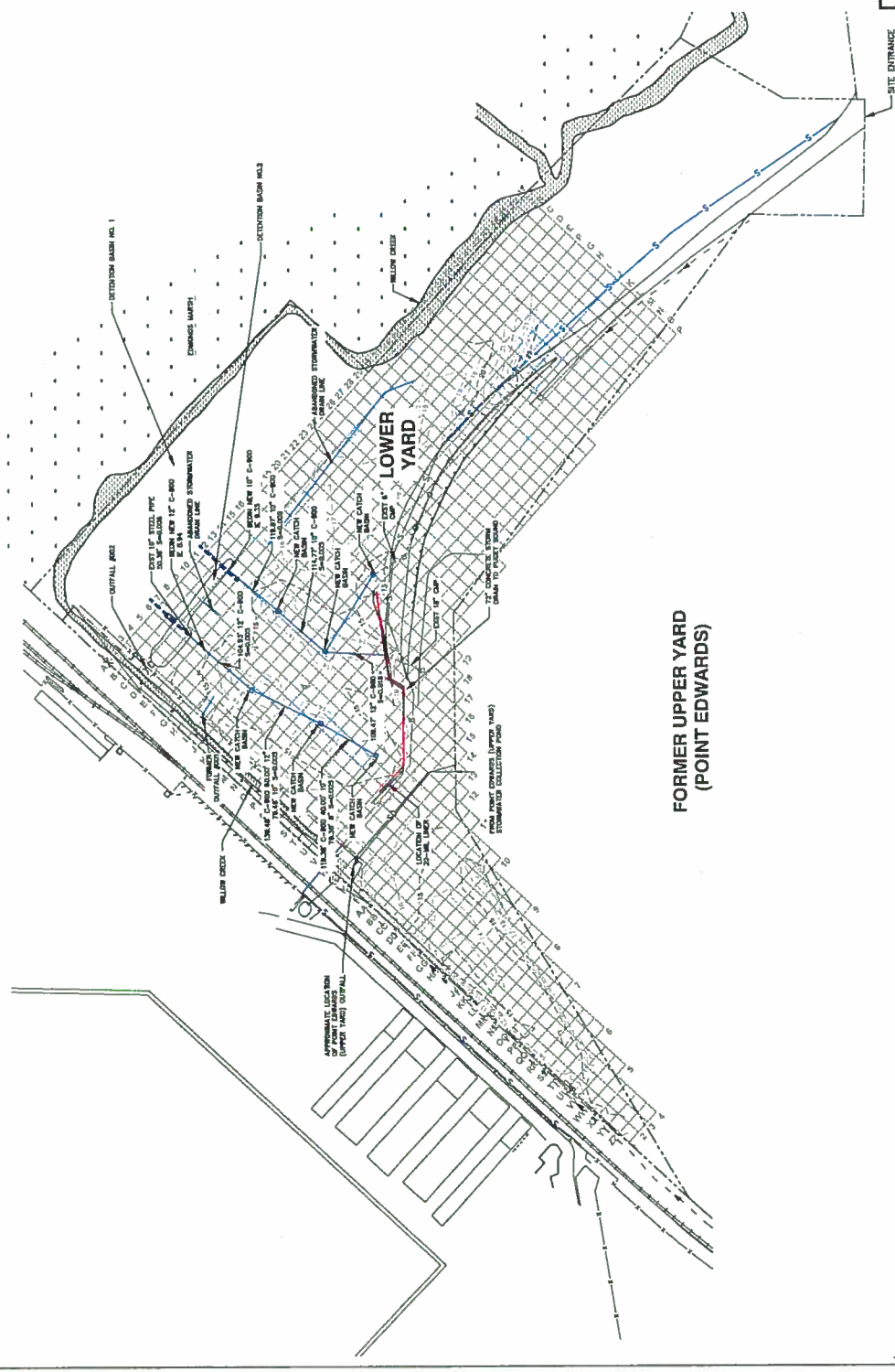


LEGEND:

- LOWER YARD SITE BOUNDARY
- MEAN HIGH WATER LEVEL
- MAJOR ELEVATION CONTOUR
- MINOR ELEVATION CONTOUR
- WSDOT 48" DIAMETER STORMWATER LINE
- WSDOT 54" DIAMETER STORMWATER LINE
- WSDOT 60" DIAMETER STORMWATER LINE
- WSDOT 78" DIAMETER STORMWATER LINE
- - - - - PROPOSED NEW PIPING
- WILLOW CREEK
- EDMONDS MARSH
- RAILROAD TRACK

NOTE:

- 1. BASE MAP SUPPLIED BY SLR INTERNATIONAL CORP., APRIL 2007, AT A SCALE OF 1"=150'.
- 2. 72" STORM DRAIN LINE OWNED AND OPERATED BY WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. THIS LINE HAS BEEN CONNECTED TO SITE INFRASTRUCTURE.



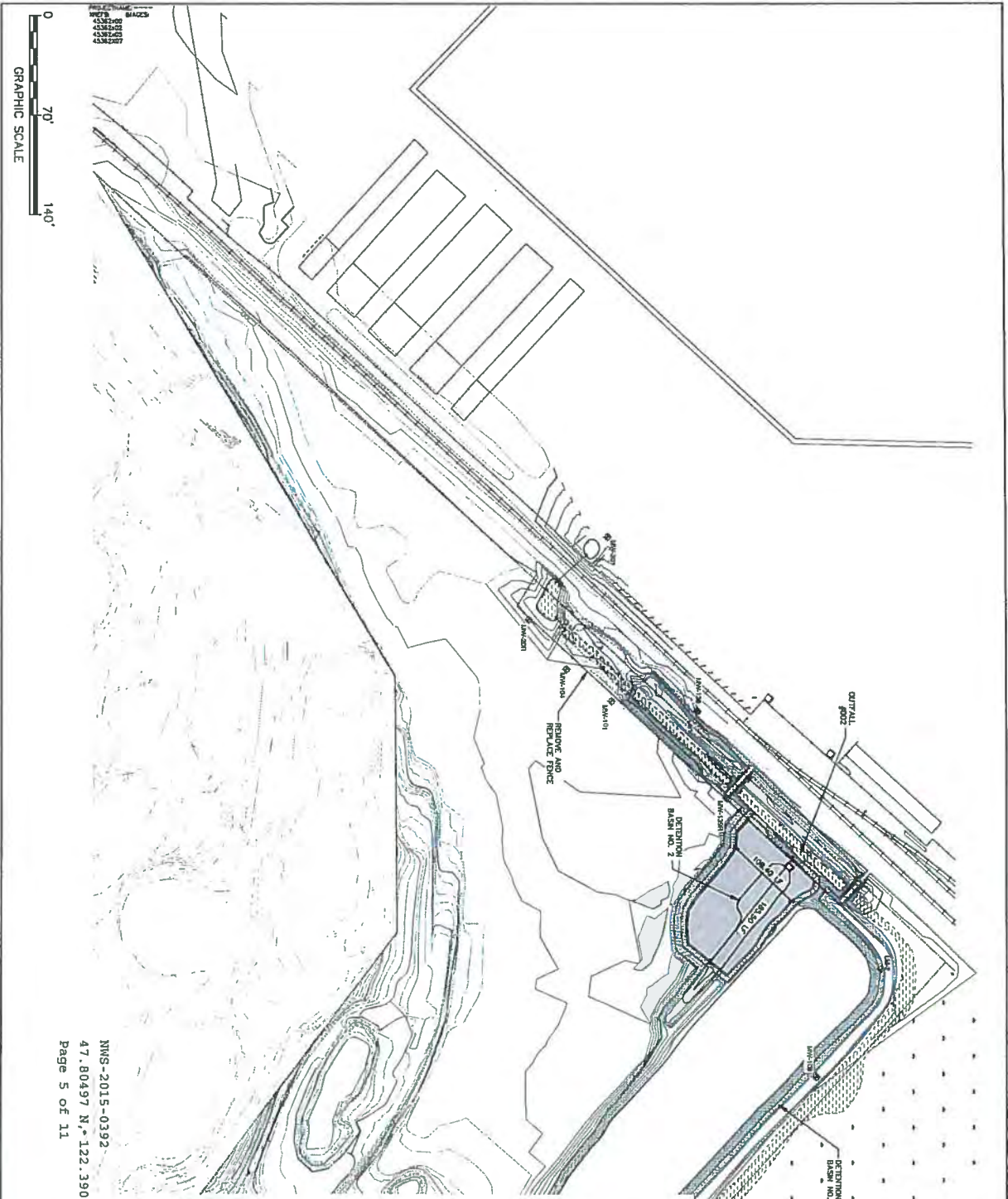
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CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
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**SUBSURFACE PIPING
THROUGHOUT SITE**



FIGURE
4



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ESTIMATED EXCAVATION QUANTITIES			
EXCAVATION AREA (SQ FT)	EXCAVATION VOLUME (CU YD)	EXCAVATION VOLUME (CU YD)	TOTAL MATERIAL EXCAVATION VOLUME (CU YD)
RRS&P	688,131	1,086,371	644,607

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
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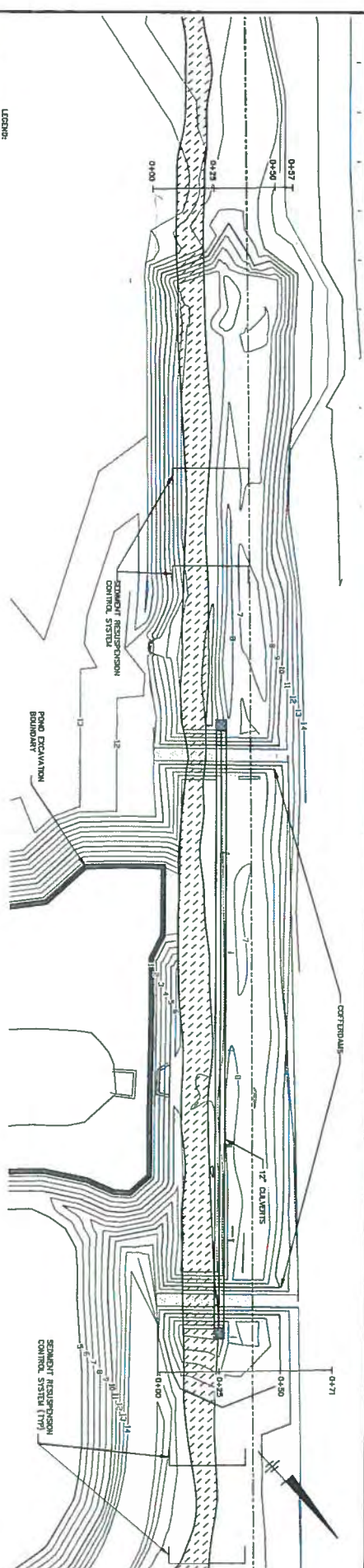
EXCAVATION PLAN



FIGURE 5

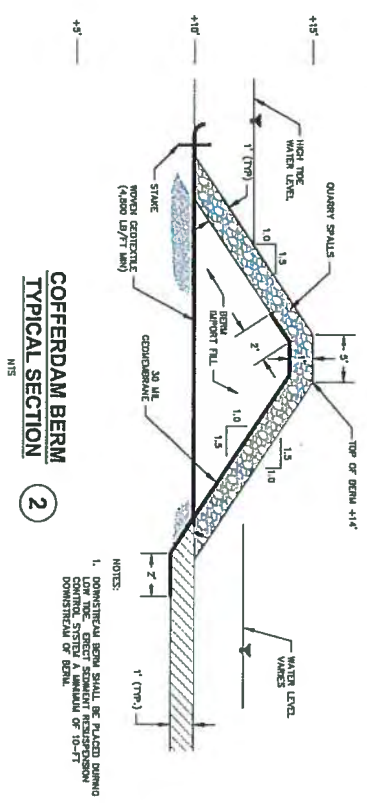
- LEGEND**
- LOWER AND SITE BOUNDARY
 - PROPOSED SOIL EXCAVATION AREA
 - EXCAVATION
 - FENCE LINE
 - MAINTENANCE TRAIL
 - WALKWAY
 - DETECTION BASIN
 - EXCAVATION CONTROL
 - MONITORING WELL LOCATION AND DESCRIPTION
 - 7" STATION MARK TO PILET SOUND

- NOTES:**
1. BLUE LINE SHOWN BY SA INTERNATIONAL, CORP., APRIL 2007, AT A SCALE OF 1"=100'
 2. DATED ASBESTOS SOIL FOR WALKWAY CROSS PROVIDED BY OYAK 1/24/2015
 3. EXCAVATION AREA EXTENDING APPROXIMATELY 100' WEST BY 100' COLLECTED PROVIDED BY 70-1 BORED OPEN SAMPLES DATA
 4. HORIZONTAL, VERTICAL, SUBMERSION SIVIT COORDINATE SYSTEM
 5. NORTH ZONE GRID EASTING
 6. NORTH ZONE GRID NORTHING
 7. DATE: 11/15/2015
 8. DRAWN BY: JARPA
 9. CHECKED BY: JARPA
 10. APPROVED BY: JARPA
 11. DATE: 11/15/2015
 12. VERTICAL REFERENCE ELEVATION METHOD: (MSSL)



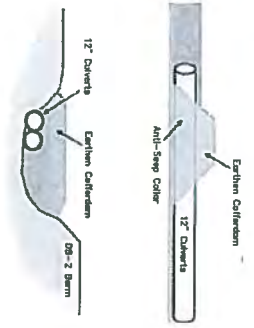
COFFER DAM LOCATION PLAN

- LEGEND:**
- SITE BOUNDARY
 - MEAN HIGH WATER LEVEL
 - WILLOW CREEK
 - POND EXCAVATION BOUNDARY
 - CULVERT
 - SEDIMENT RESUSPENSION CONTROL SYSTEM
 - TEMPORARY ROCK CHECK DAM

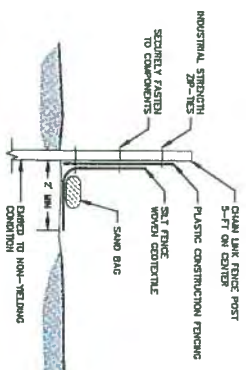


COFFERDAM BERM TYPICAL SECTION (2)

- NOTES:**
1. COFFERDAM BERM SHALL BE PLACED DURING CONTROL SYSTEM INSTALLATION.



EARTHEN COFFERDAM



SEDIMENT RESUSPENSION CONTROL SYSTEM

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
 FORMER LINDOGAL BULK FUEL TERMINAL
 EDMONDS, WASHINGTON
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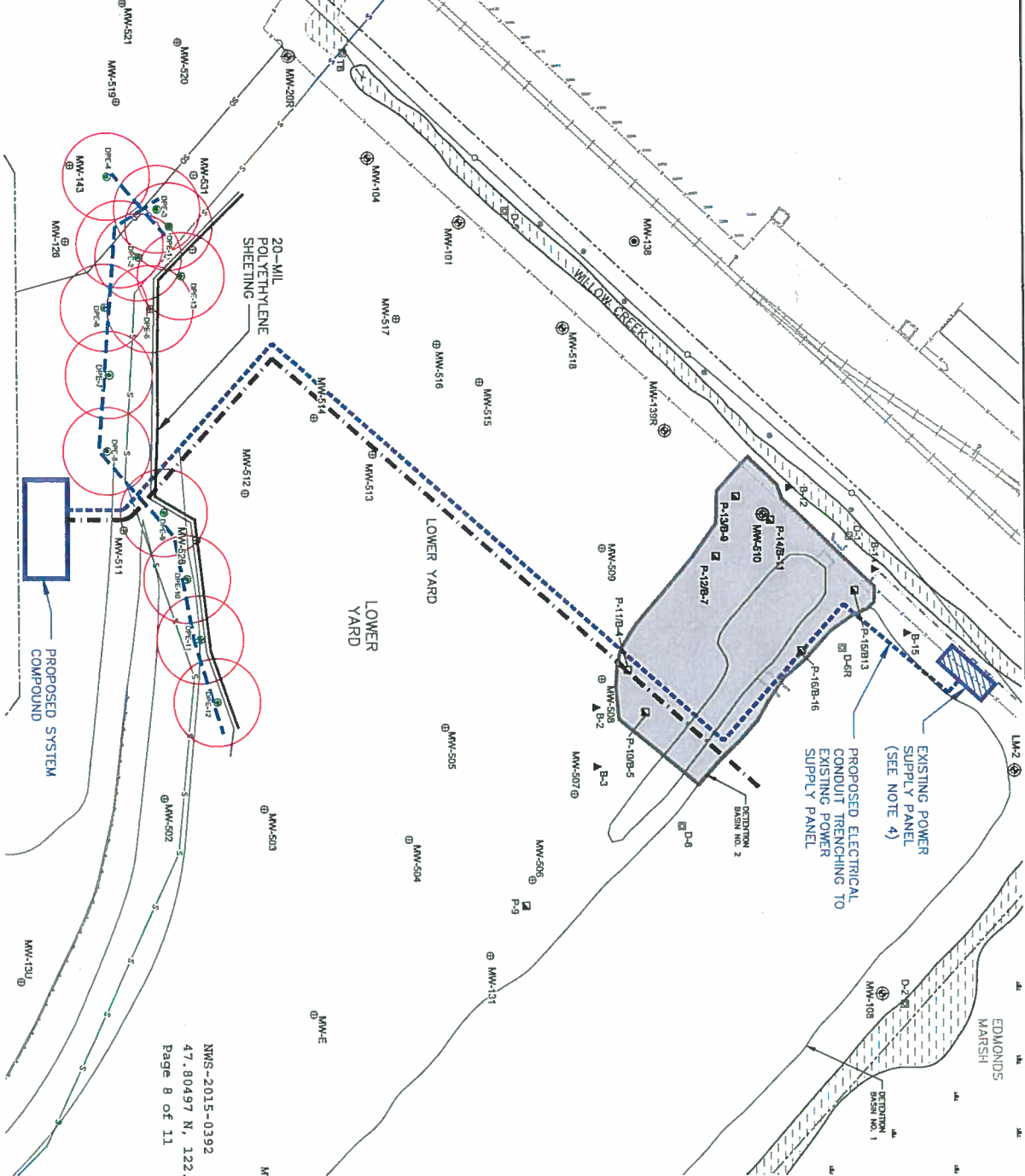
COFFERDAM PLAN AND SECTIONS

ARCADIS

FIGURE 7

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AREAS:
 45382432
 45382439
 45382438



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LEGEND:
 D-1 STAFF GAUGE
 MM-203 INTERIOR MONITORING WELL LOCATION AND DESIGNATION
 MM-108 PERIMETER MONITORING WELL LOCATION
 MM-138 BNSF WELL LOCATION
 P-111 PIEZOMETER
 EXCAVATION BOUNDARY
 PROPERTY BOUNDARY
 WSDOT STORMWATER LINE
 50' POINT EDWARDS STORM DRAIN LINE
 PROPOSED DUAL PHASE EXTRACTION WELL (DPE)
 DPE-C-12
 ESTIMATED DPE RIG - 30 FOOT RADIUS OF INFLUENCE
 MEAN HIGH WATER LEVEL
 PROPOSED ELECTRICAL CONDUIT TRENCHING
 PROPOSED PIPE TRENCHING
 TREATED GROUNDWATER DISCHARGE LINE
 RAILROAD TRACK
 WILLOW CREEK
 EDMONDS MARSH

NOTES:
 1. HORIZONTAL DATUM: WASHINGTON STATE COORDINATE SYSTEM
 NORTH ZONE (NAD 83/98)
 VERTICAL DATUM: N.A.V.D. 88
 UNITS: U.S. SURVEY FEET
 HORIZONTAL AND VERTICAL CONTROL ESTABLISHED BY GPS
 VIA VERTICAL REFERENCE STATION NETWORK (VRSN).
 2. SOUTHEAST PORTION OF WSDOT STORMWATER LINE HAS NOT BEEN SURVEYED.
 3. LOCATION OF EXISTING POWER SUPPLY PANEL HAS NOT BEEN SURVEYED.

PROPOSED DPE SYSTEM LAYOUT
 CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
 FORMER UNOCAL BULK FUEL TERMINAL
 EDMONDS, WASHINGTON
 JARPA APPLICATION

0 70' 140'
 GRAPHIC SCALE

ARCADIS
 FIGURE 8

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

- A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 8/7/2015
- B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Kim Jolitz, Chevron Environmental Management Company, 6101 Bollinger Canyon Road, San Ramon, California, 94583
- C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Seattle District, Union Oil Company of California (Edmonds Bulk Fuel Terminal); NWS-2015-392
- D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
 State: WA County: Snohomish City: Edmonds
 Center coordinates of site (lat/long in degree decimal format): Lat. 47.80497°N, Long. -122.39013°W
 Name of nearest waterbody: Willow Creek
 Name of any water bodies on the site, in the review area, that have been identified as Section 10 waters:
 Tidal: _____
 Non-Tidal: Willow Creek

Identify (estimate) amount of waters in the review area (if there are multiple sites, use the table instead):
 Non-wetland waters (total for site): linear feet 600 and width (ft) 50 or _____ acres.
 Stream Flow: RPW Flow path: Willow Creek flows into Puget Sound which is a TNW.
 Wetlands: _____ acres (total for site).
 Cowardin Class(es): _____

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
1	47.80497	-122.39013		30,000 square-feet	R1UB

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- Office (Desk) Determination. Date: 8/7/2015
 Field Determination. Date(s): _____

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Dated 4/7/2015.
 Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 Office concurs with data sheets/delineation report.
 Office does not concur with data sheets/delineation report. Explain: _____
 Data sheets prepared by the Corps: _____
 Corps navigable waters' study: _____
 U.S. Geological Survey Hydrologic Atlas: Accessed 8/7/2015.
 USGS NHD data. USGS 8 and 12 digit HUC maps.
 U.S. Geological Survey map(s). Cite scale & quad name: _____
 USDA Natural Resources Conservation Service Soil Survey. Citation: _____
 National wetlands inventory map(s). Cite name: _____
 State/Local wetland inventory map(s): _____
 FEMA/FIRM maps: _____
 100-year Floodplain Elevation is: _____ (National Geodetic Vertical Datum of 1929)
 Photographs: Aerial (Name & Date): _____
 Photographs: Other (Name & Date): _____
 Previous determination(s). File no., date (and findings) of response letter (determination and coordination): _____
 Other information (please specify): _____

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the information in this document.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature:



Regulatory Project Manager



Date

Person¹ Requesting Preliminary JD

Date

¹ Permit applicant, landowner, a lease, easement or option holder, or individual with identifiable and substantial legal interest in the property; this signature is not required for preliminary JDs associated with enforcement actions.



**JARPA 2015 Application -
Appendix F**

Photos

Current Conditions – 4/20/15



Site photo facing south



Detention Basin No. 2



Outfall Structure



Willow Creek

NWS-2015-0392



US Army Corps
of Engineers ®
Seattle District

NATIONWIDE PERMIT 33

Terms and Conditions



Effective Date: June 15, 2012

-
- A. Description of Authorized Activities
 - B. Corps National General Conditions for all NWP
 - C. Corps Seattle District Regional General Conditions
 - D. Corps Regional Specific Conditions for this NWP
 - E. State 401 Certification General Conditions
 - F. State 401 Certification Specific Conditions for this NWP
 - G. EPA 401 Certification General Conditions
 - H. EPA 401 Certification Specific Conditions for this NWP
 - I. Coastal Zone Management Consistency Response for this NWP
-

In addition to any special condition that may be required on a case-by-case basis by the District Engineer, the following terms and conditions must be met, as applicable, for a Nationwide Permit authorization to be valid in Washington State.

A. DESCRIPTION OF AUTHORIZED ACTIVITIES

33. Temporary Construction, Access, and Dewatering. Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites, provided that the associated primary activity is authorized by the Corps of Engineers or the U.S. Coast Guard. This NWP also authorizes temporary structures, work, and discharges, including cofferdams, necessary for construction activities not otherwise subject to the Corps or U.S. Coast Guard permit requirements. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. The use of dredged material may be allowed if the district engineer determines that it will not cause more than minimal adverse effects on aquatic resources. Following completion of construction, temporary fill must be entirely removed to an area that has no waters of the United States, dredged material must be returned to its original location, and the affected areas must be restored to pre-construction elevations. The affected areas must also be revegetated, as appropriate. This permit does not authorize the use of cofferdams to dewater wetlands or other aquatic areas to change their use. Structures left in place after construction is completed require a separate section 10 permit if located in navigable waters of the United States. (See 33 CFR part 322.)

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 31). The pre-construction notification must include a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions. (Sections 10 and 404)

B. CORPS NATIONAL GENERAL CONDITIONS FOR ALL NWP

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401

water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR § 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of

normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the

project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have “no effect” on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWP.

(e) Authorization of an activity by a NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any “take” permits required under the U.S. Fish and Wildlife Service’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such “take” permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought

from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWP 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332. (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment. (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered. (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). (4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the

only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization

authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include: (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions; (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and (c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either: (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or (2) 45 calendar days have passed from the district engineer’s receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or

Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWP 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information: (1) Name, address and telephone numbers of the prospective permittee; (2) Location of the proposed project; (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans); (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate; (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan. (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. (2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of

intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will

consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

C. CORPS SEATTLE DISTRICT REGIONAL GENERAL CONDITIONS

1. Aquatic Resources Requiring Special Protection. Activities resulting in a loss of waters of the United States in a mature forested wetland, bog, bog-like wetland, aspen-dominated wetland, alkali wetland, wetlands in a dunal system along the Washington coast, vernal pools, camas prairie wetlands, estuarine

wetlands, and wetlands in coastal lagoons cannot be authorized by a NWP, except by the following NWPs:

- NWP 3 – Maintenance
- NWP 20 – Oil Spill Cleanup
- NWP 32 – Completed Enforcement Actions
- NWP 38 – Cleanup of Hazardous and Toxic Waste

In order to use one of the above-referenced NWPs in any of the aquatic resources requiring special protection, you must submit a pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 (Pre-Construction Notification) and obtain written approval before commencing work.

2. Commencement Bay. The following NWPs may not be used to authorize activities located in the Commencement Bay Study Area (see Figure 1 at www.nws.usace.army.mil, select Regulatory Permits then Permit Guidebook, then Nationwide Permits) requiring Department of the Army authorization:

- NWP 12 – Utility Line Activities (substations)
- NWP 13 – Bank Stabilization
- NWP 14 – Linear Transportation Projects
- NWP 23 – Approved Categorical Exclusions
- NWP 29 – Residential Developments
- NWP 39 – Commercial and Institutional Developments
- NWP 40 – Agricultural Activities
- NWP 41 – Reshaping Existing Drainage Ditches
- NWP 42 – Recreational Facilities
- NWP 43 – Stormwater Management Facilities

3. New Bank Stabilization Prohibition Areas in Tidal Waters of Puget Sound. Activities involving new bank stabilization in tidal waters in Water Resource Inventory Areas (WRIAs) 8, 9, 10, 11, and 12 (within the specific area identified on Figure 2 at www.nws.usace.army.mil, select Regulatory Permits then Permit Guidebook, then Nationwide Permits) cannot be authorized by a NWP.

4. Bank Stabilization. Any project including new or maintenance bank stabilization activities requires pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 for Pre-Construction Notification. This requirement does not apply to maintenance work exempt by 33 CFR 323.4 (a)(2). Each notification must also include the following information:

a. Need for the work, including the cause of the erosion and the threat posed to structures, infrastructure, and/or public safety. The notification must also include a justification for the need to place fill or structures waterward of the line of the Corps' jurisdiction (typically, the ordinary high water mark or mean higher high water mark).

b. Current and expected post-project sediment movement and deposition patterns in and near the project area. In tidal waters, describe the location and size of the nearest bluff sediment sources (feeder bluffs) to the project area and current and expected post-project nearshore drift patterns in the project area.

c. Current and expected post-project habitat conditions, including the presence of fish, wildlife and plant species, submerged aquatic vegetation, spawning habitat, and special aquatic sites (e.g., vegetated shallows, riffle and pool complexes, or mudflats) in the project area.

d. In rivers and streams, an assessment of the likely impact of the proposed work on upstream, downstream and cross-stream properties (at a minimum the area assessed should extend from the nearest upstream bend to the nearest downstream bend of the watercourse). Discuss the methodology used for determining effects. The Corps reserves the right to request an increase in the reach assessment area to fully address the relevant ecological reach and associated habitat.

e. For new bank stabilization activities in rivers and streams, describe the type and length of existing bank stabilization within 300 feet up and downstream of the project area. In tidal areas, describe the type and length of existing bank stabilization within 300 feet along the shoreline on both sides of the project area.

f. Demonstrate the proposed project incorporates the least environmentally damaging practicable bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large woody material, native plantings, and beach nourishment in certain circumstances. If rock must be used due to site erosion conditions, explain how the bank stabilization structure incorporates elements beneficial to fish. If the Corps determines you have not incorporated the least environmentally damaging practicable bank protection methods and/or have not fully compensated for impacts to aquatic resources, you must submit a compensatory mitigation plan to compensate for impacts to aquatic resources.

g. A planting plan using native riparian plant species unless the applicant demonstrates a planting plan is not appropriate or not practicable.

5. Crossings of Waters of the United States. Any project including installing, replacing, or modifying crossings of waters of the United States, such as culverts, requires pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 for Pre-Construction Notification. This requirement does not apply to maintenance work exempt by 33 CFR 323.4 (a)(2). Each notification must also include the following information:

- a. Need for the crossing.
- b. Crossing design criteria and design methodology.
- c. Rationale behind using the specific design method for the crossing.

6. Cultural Resources and Human Burials. Permittees must immediately stop work and notify the District Engineer within 24 hours if, during the course of conducting authorized work, human burials, cultural resources, or historic properties, as identified by the National Historic Preservation Act, are discovered. Failure to stop work in the area of discovery until the Corps can comply with the provisions of 33 CFR 325 Appendix C, the National Historic Preservation Act, and other pertinent laws and regulations could result in a violation of state and federal laws. Violators are subject to civil and criminal penalties.

7. Essential Fish Habitat. An activity which may adversely affect essential fish habitat, as identified under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), may not be authorized by NWP until essential fish habitat requirements have been met by the applicant and the Corps. Non-federal permittees shall notify the District Engineer if essential fish habitat may be affected by, or is in the vicinity of, a proposed activity and shall not begin work until notified by the District Engineer that the requirements of the essential fish habitat provisions of the MSA have been satisfied and the activity is authorized. The notification must identify the type(s) of essential fish habitat (e.g., Pacific salmon,

groundfish, and/or coastal-pelagic species) managed by a Fishery Management Plan that may be affected. Information about essential fish habitat is available at www.nwr.noaa.gov/.

8. Vegetation Protection and Restoration. Permittees must clearly mark all construction area boundaries before beginning work. The removal of native vegetation in riparian areas and wetlands, and the removal of submerged aquatic vegetation in estuarine and tidal areas must be avoided and minimized to the maximum extent practicable. Areas subject to temporary vegetation removal shall be replanted with appropriate native species by the end of the first planting season following the disturbance except as waived by the District Engineer. If an aquaculture area is permitted to impact submerged aquatic vegetation under NWP 48, the aquaculture area does not need to be replanted with submerged aquatic vegetation.

9. Access. You must allow representatives of this office to inspect the authorized activity at any time deemed necessary to ensure the work is being, or has been, accomplished in accordance with the terms and conditions of your permit.

10. Contractor Notification of Permit Requirements. The permittee must provide a copy of the nationwide permit verification letter, conditions, and permit drawings to all contractors involved with the authorized work, prior to the commencement of any work in waters of the U.S.

D. CORPS REGIONAL SPECIFIC CONDITIONS FOR THIS NWP

1. Temporary fills may be left in place no longer than six months unless the permittee requests and receives a waiver from the District Engineer.

E. STATE 401 CERTIFICATION GENERAL CONDITIONS:

1. **For in-water construction activities**. Individual 401 review is required for projects or activities authorized under NWPs that will cause, or be likely to cause or contribute to an exceedence of a State water quality standard (WAC 173-201A) or sediment management standard (WAC 173-204).

Note: State water quality standards are posted on Ecology's website: <http://www.ecy.wa.gov/programs/wq/swqs/>. Click "Surface Water Criteria" for freshwater and marine water standards. Sediment management standards are posted on Ecology's website: <http://www.ecy.wa.gov/biblio/wac173204.html>. Information is also available by contacting Ecology's Federal Permit staff.

2. **Projects or Activities Discharging to Impaired Waters**. Individual 401 review is required for projects or activities authorized under NWPs if the project or activity will occur in a 303(d) listed segment of a waterbody or upstream of a listed segment and may result in further exceedences of the specific listed parameter.

Note: To determine if your project or activity is in a 303(d) listed segment of a waterbody, visit Ecology's Water Quality Assessment webpage for maps and search tools, <http://www.ecy.wa.gov/programs/wq/303d/2008/>. Information is also available by contacting Ecology's Federal Permit staff.

3. **Notification**. For projects or activities that will require Individual 401 review, applicants must provide Ecology with the same documentation provided to the Corps (as described in Corps Nationwide Permit General Condition 31, Pre-Construction Notification), including, when applicable:

- (a) A description of the project, including site plans, project purpose, direct and indirect adverse environmental effects the project would cause, and any other Department of the Army permits used or intended to be used to authorize any part of the proposed project or any related activity.
- (b) Delineation of special aquatic sites and other waters of the United States. Wetland delineations must be prepared in accordance with the current method required by the Corps and shall include Ecology's Wetland Rating form. Wetland rating forms are subject to review and verification by Ecology staff.

Note: Wetland rating forms are available on Ecology's Wetlands website:

<http://www.ecy.wa.gov/programs/sea/wetlands/ratingsystems> or by contacting Ecology's Federal Permit staff.

- (c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted.

Mitigation plans submitted for Ecology review and approval shall be based on the guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (Ecology Publications #06-06-011a and #06-06-011b).

- (d) Coastal Zone Management Program "Certification of Consistency" Form if the project is located within a coastal county (Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, and Whatcom counties).

Note: CZM Certification of Consistency forms are available on Ecology's Federal Permit website: <http://www.ecy.wa.gov/programs/sea/fed-permit/index.html> or by contacting Ecology's Federal Permit staff.

- (e) Other applicable requirements of Corps Nationwide Permit General Condition 31, Corps Regional Conditions, or notification conditions of the applicable NWP.

Note: Ecology has 180 days from receipt of applicable documents noted above and a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program to issue a WQC and CZM consistency determination response. If more than 180 days pass after Ecology's receipt of these documents, your requirement to obtain an individual WQC and CZM consistency determination response becomes waived.

- 4. **Aquatic resources requiring special protection.** Certain aquatic resources are unique, difficult-to-replace components of the aquatic environment in Washington State. Activities that would affect these resources must be avoided to the greatest extent possible. Compensating for adverse impacts to high value aquatic resources is typically difficult, prohibitively expensive, and may not be possible in some landscape settings.

Individual 401 review is required for activities in or affecting the following aquatic resources (and not prohibited by Regional Condition 1):

- (a) Wetlands with special characteristics (as defined in the Washington State Wetland Rating Systems for western and eastern Washington, Ecology Publications #04-06-025 and #04-06-015):
 - Estuarine wetlands
 - Natural Heritage wetlands

- Bogs
- Old-growth and mature forested wetlands
- Wetlands in coastal lagoons
- Interdunal wetlands
- Vernal pools
- Alkali wetlands

(b) Fens, aspen-dominated wetlands, camas prairie wetlands, and marine water with eelgrass (*Zostera marina*) beds (except for NWP 48).

(c) Category I wetlands

(d) Category II wetlands with a habitat score ≥ 29 points. This State General Condition does not apply to the following Nationwide Permits:

- NWP 20 – Response Operations for Oil and Hazardous Substances
- NWP 32 – Completed Enforcement Actions

5. Mitigation. For projects requiring Individual 401 review, adequate compensatory mitigation must be provided for wetland and other water quality-related impacts of projects or activities authorized under the NWP Program.

(a) Mitigation plans submitted for Ecology review and approval shall be based on the guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (Ecology Publications #06-06-011a and #06-06-011b) and shall, at a minimum, include the following:

- i. A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.
- ii. The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded)
- iii. The rationale for the mitigation site that was selected
- iv. The goals and objectives of the compensatory mitigation project
- v. How the mitigation project will be accomplished, including construction sequencing, best management practices to protect water quality, proposed performance standards for measuring success and the proposed buffer widths
- vi. How it will be maintained and monitored to assess progress towards goals and objectives. Monitoring will generally be required for a minimum of five years. For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.
- vii. How the compensatory mitigation site will be legally protected for the long term.

Refer to Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Ecology Publication #06-06-011b) for guidance on developing mitigation plans.

Ecology encourages the use of alternative mitigation approaches, including advance mitigation and other programmatic approaches such as mitigation banks and programmatic mitigation areas at the local level.

If you are interested in proposing use of an alternative mitigation approach, consult with the appropriate Ecology regional staff person. (see <http://www.ecy.wa.gov/programs/sea/wetlands/contacts.htm>)

Information on the state wetland mitigation banking program is available on Ecology's website: <http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/index.html>

- 6. Temporary Fills.** Individual 401 review is required for any project or activity with temporary fill in wetlands or other waters of the State for more than 90 days, unless the applicant has received written approval from Ecology.

Note: This State General Condition does not apply to projects or activities authorized under NWP 33, Temporary Construction, Access, and Dewatering

- 7. Stormwater discharge pollution prevention:** All projects that involve land disturbance or impervious surfaces must implement prevention or control measures to avoid discharge of pollutants in stormwater runoff to waters of the state. For land disturbances during construction, the permittee must obtain and implement permits where required and follow Ecology's current stormwater manual.

Note: Stormwater permit information is available at Ecology's Water Quality website: <http://www.ecy.wa.gov/programs/wq/stormwater/index.html>. Ecology's Stormwater Management and Design Manuals are available at: <http://www.ecy.wa.gov/programs/wq/stormwater/municipal/StrmwtrMan.html>. Information is also available by contacting Ecology's Federal Permit staff.

- 8. State Certification for PCNs not receiving 45-day response.** In the event the U.S. Army Corps of Engineers does not respond to a complete pre-construction notification within 45 days, the applicant must contact Ecology for Individual 401 review.

F. STATE 401 CERTIFICATION SPECIFIC CONDITIONS FOR THIS NWP: Certified subject to conditions. Permittee must meet **Ecology 401 General Conditions**. Individual 401 review is required for projects or activities authorized under this NWP if:

1. Temporary fills are placed in more than ½ acre of wetlands and left in place for more than 90 days.
2. Temporary fills are left in place for longer than six months.

G. EPA 401 CERTIFICATION GENERAL CONDITIONS:

A. Any activities in the following types of wetlands and waters of the United States will need to apply for an individual 401 certification: Mature forested wetlands, bogs, bog-like wetlands, wetlands in dunal systems along the Washington coast, coastal lagoons, vernal pools, aspen-dominated wetlands, alkali wetlands, camas prairie wetlands, estuarine wetlands, including salt marshes, and marine waters with eelgrass or kelp beds.

B. A 401 certification determination is based on the project or activity meeting established turbidity levels. The EPA will be using as guidance the state of Washington's water quality standards [WAC 173-201a] and sediment quality standards [WAC 173-204]. Projects or activities that are expected to exceed these levels or that do exceed these levels will require an individual 401 certification.

The water quality standards allow for short-term turbidity exceedances after all necessary Best Management Practices have been implemented (e.g., properly placed and maintained filter fences, hay bales and/or other erosion control devices, adequate detention of runoff to prevent turbid water from flowing off-site, providing a vegetated buffer between the activity and open water, etc.), and only up to the following limits:

Wetted Stream Width at Discharge Point	Approximate Downstream Point for Determining Compliance
Up to 30 feet	50 feet
>30 to 100 feet	100 feet
>100 feet to 200 feet	200 feet
>200 feet	300 feet
LAKE, POND, RESERVOIR	Lesser of 100 feet or maximum surface dimension

C. 401 certification of projects and activities under NWP's will use Washington State Department of Ecology's most recent stormwater manual or an EPA approved equivalent manual as guidance in meeting water quality standards.

D. For projects and activities requiring coverage under an NPDES permit, certification is based on compliance with the requirements of that permit. Projects and activities not in compliance with NPDES requirements will require individual 401 certification.

E. Individual 401 certification is required for projects or activities authorized under NWP's if the project will discharge to a waterbody on the list of impaired waterbodies (the 303(d) List) and the discharge may result in further exceedance of a specific parameter the waterbody is listed for. The EPA shall make this determination on a case-by-case basis.

For projects or activities that will discharge to a 303(d)-listed waterbody that does not have an approved Total Maximum Daily Load (TMDL) or an approved water quality management plan, the applicant must provide documentation for EPA approval showing that the discharge will not result in further exceedance of the listed contaminant or impairment.

For projects or activities that will discharge to a 303(d)-listed waterbody that does not have an approved TMDL, the applicant must provide documentation for EPA approval showing that the discharge is within the limits established in the TMDL. The current list of 303(d)-listed waterbodies in Washington State will be consulted in making this determination and is available on Ecology's web site at: www.ecy.wa.gov/programs/wq/303d/2012/index.html

The EPA may issue 401 certification for projects or activities that would result in further exceedance or impairment if mitigation is provided that would result in a net decrease in listed contaminants or less impairment in the waterbody. This determination would be made during individual 401 certification review.

F. For projects requiring individual 401 certification, applicants must provide the EPA with the same documentation provided to the Corps, (as described in Corps' National General Condition 31, Pre-Construction Notification), including, when applicable:

- (a) A description of the project, including site plans, project purpose, direct and indirect adverse

environmental effects the project would cause, any other U.S. Department of the Army permits used or intended to use to authorize any part of the proposed project or any related activity.

- (b) Delineation of special aquatic sites and other waters of the United States. Wetland delineations must be prepared in accordance with the current method required by the Corps.
- (c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted.
- (d) Other applicable requirements of Corps National General Condition 31, Corps Regional Conditions, or notification conditions of the applicable NWP.

A request for individual 401 certification- review is not complete until the EPA receives the applicable documents noted above and the EPA has received a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program.

G. No activity, including structures and work in navigable waters of the United States or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

H. An individual 401 certification is based on adequate compensatory mitigation being provided for aquatic resource and other water quality-related impacts of projects or activities authorized under the NWP Program.

A 401 certification is contingent upon written approval from the EPA of the compensatory mitigation plan for projects and activities resulting in any of the following:

- impacts to any aquatic resources requiring special protection (as defined in EPA General Condition A or Corps General Regional Condition 1)
- any impacts to tidal waters or non-tidal waters adjacent to tidal waters (applies to NWP 14)
- Or, any impacts to aquatic resources greater than ¼ acre.

Compensatory mitigation plans submitted to the EPA shall be based on the Joint Agency guidance provided in *Wetland Mitigation in Washington State, Parts 1 and 2* (Ecology Publication #06-06-011a and #06-06-011b) and shall, at a minimum, include the following:

- (1) A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.
- (2) The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded)
- (3) The rationale for the mitigation site that was selected
- (4) The goals and objectives of the compensatory mitigation project
- (5) How the mitigation project will be accomplished, including proposed performance standards for measuring success (including meeting planting success standard of 80 percent survival after five years), evidence for hydrology at the mitigation site, and the proposed buffer widths;
- (6) How it will be maintained and monitored to assess progress towards goals and objectives.
- (7) Completion and submittal of an “as-built conditions report” upon completion of grading, planting and hydrology establishment at the mitigation site;
- (8) Completion and submittal of monitoring reports at years 3 and 5 showing the results of

monitoring for hydrology, vegetation types, and aerial cover of vegetation.

(9) For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.

(10) Documentation of legal site protection mechanism (covenant or deed restriction) to show how the compensatory mitigation site will be legally protected for the long-term.

I. An individual 401 certification is required for any activity where temporary fill will remain in wetlands or other waterbodies for more than 90 days. The 90 day period begins when filling activity starts in the wetland or other waterbody.

J. An individual 401 is required for any proposed project or activity in waterbodies on the most current list of the following Designated Critical Resource Waters (per Corps General Condition 22).

K. An individual 401 certification is required for any proposed project that would increase permanent, above-grade fill within the 100-year floodplain (including the floodway and the flood fringe).

[*Note:* The 100-year floodplain is defined as those areas identified as Zones A, A1-30, AE, AH, AO, A99, V, V1-30, and VE on the most current Federal Emergency Management Agency Flood Rate Insurance Maps, or areas identified as within the 100-year floodplain on applicable local Flood Management Program maps. The 100-year flood is also known as the flood with a 100-year recurrence interval, or as the flood with an exceedance probability of 0.01.]

H. EPA 401 CERTIFICATION SPECIFIC CONDITIONS FOR THIS NWP: Partially denied without prejudice. Permittee must meet EPA 401 General Conditions. Individual 401 certification required for projects authorized under this NWP if the project or activity has temporary fills left in place for more than 90 days. The 90 day period begins when fill is initially placed in wetlands or other waters of the U.S.

I. COASTAL ZONE MANAGEMENT CONSISTENCY RESPONSE FOR THIS NWP: Concur subject to the following condition: When individual 401 review by Ecology is triggered, a CZM Certification of Consistency form must be submitted for projects located within the 15 coastal counties (see State General 401 Condition 3 (Notification)).



US Army Corps
of Engineers ®
Seattle District

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT



Permit Number: _____ NWS-2015-392 _____

Name of Permittee: _____ Union Oil Company of California _____

Date of Issuance: _____ SEP - 2 2015 _____

Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following address:

Department of the Army
U.S. Army Corps of Engineers
Seattle District, Regulatory Branch
Post Office Box 3755
Seattle, Washington 98124-3755

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your project is subject to suspension, modification, or revocation.

<input checked="" type="checkbox"/>	The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit. Date work complete: _____
	<input type="checkbox"/> Photographs and as-built drawings of the authorized work are attached.

<input checked="" type="checkbox"/>	If applicable, the mitigation required (not including monitoring (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit. Date work complete: _____
	<input type="checkbox"/> Photographs and as-built drawings of the mitigation are attached.

Printed Name: Sam Ailes

Signature: _____

Date: 11-1-17



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: March 10, 2017
Project End Date: March 10, 2020

Permit Number: 2017-4-141+01
FPA/Public Notice Number: N/A
Application ID: 4099

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
Union Oil Company of California (Unocal) ATTENTION: Kim Jolitz 6101 Bollinger Canyon Rd San Ramon, CA 94583	

Project Name: Former Unocal Edmonds Bulk Fuel Terminal Interim Action

Project Description: The Washington State Department of Ecology (Ecology) has directed Unocal to excavate petroleum impacted soils in the vicinity of DB-2. Ecology considers this project an extension of the 2007/2008 remedial action under Agreed Order (AO) No. DE4460 as referenced in the Ecology letter dated September 23, 2014. The letter is provided in Appendix B for reference. Note that the project will be conducted in conjunction with other work involving installation of a soil and groundwater treatment system using Dual Phase Extraction (DPE) technology to address impacts remaining near the WSDOT storm water line area. This additional work is being performed on a portion of the site that is removed from jurisdictional areas (Willow Creek) and, therefore, will not require a Joint Aquatic Resources Permit.

PROVISIONS

1. TIMING - PLANS - INVASIVE SPECIES CONTROL

1. TIMING LIMITATION: You may begin the project on JULY 1 TO OCTOBER 1 IN ANY GIVEN YEAR.

2. APPROVED PLANS: You must accomplish the work per plans and specifications submitted with the application and approved by the Washington Department of Fish and Wildlife, entitled FORMER UNOCAL EDMONDS BULK FUEL TERMINAL INTERM ACTION, dated MAY 5, 2015, except as modified by this Hydraulic Project Approval. You must have a copy of these plans available on site during all phases of the project proposal.

3. INVASIVE SPECIES CONTROL: Thoroughly clean all equipment and gear before arriving and leaving the job site to prevent the transport and introduction of aquatic invasive species. Properly dispose of any water and chemicals used to clean gear and equipment. You can find additional information in the Washington Department of Fish and Wildlife's Invasive Species Management Protocols (November 2012), available online at <http://wdfw.wa.gov/publications/01490/wdfw01490.pdf>.

NOTIFICATION REQUIREMENTS

4. PRE- AND POST-CONSTRUCTION NOTIFICATION: You, your agent, or contractor must contact the Washington Department of Fish and Wildlife by e-mail at HPAapplications@dfw.wa.gov; mail to Post Office Box 43234, Olympia, Washington 98504-3234; or fax to (360) 902-2946 at least three business days before starting work, and again within seven days after completing the work. The notification must include the permittee's name, project location, starting date for work or date the work was completed, and the permit number. The Washington Department of Fish and Wildlife may conduct inspections during and after construction; however, the Washington Department of Fish and Wildlife will notify you or your agent before conducting the inspection.

5. FISH KILL/ WATER QUALITY PROBLEM NOTIFICATION: If a fish kill occurs or fish are observed in distress at the



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job site, immediately stop all activities causing harm. Immediately notify the Washington Department of Fish and Wildlife of the problem. If the likely cause of the fish kill or fish distress is related to water quality, also notify the Washington Military Department Emergency Management Division at 1-800-258-5990. Activities related to the fish kill or fish distress must not resume until the Washington Department of Fish and Wildlife gives approval. The Washington Department of Fish and Wildlife may require additional measures to mitigate impacts.

STAGING, JOB SITE ACCESS, AND EQUIPMENT

6. Retain all natural habitat features on the bed or banks including large woody material and boulders. You may move these natural habitat features during construction but you must place them near the preproject location before leaving the job site.

7. Equipment used for this project may operate waterward of the ordinary high water line, provided the drive mechanisms (wheels, tracks, tires, etc.) do not enter or operate waterward of the ordinary high water line.

8. Remove soil or debris from the drive mechanisms (wheels, tires, tracks, etc.) and undercarriage of equipment prior to operating the equipment waterward of the ordinary high water line.

9. Check equipment daily for leaks and complete any required repairs in an upland location before using the equipment in or near the water.

10. Use environmentally acceptable lubricants composed of biodegradable base oils such as vegetable oils, synthetic esters, and polyalkylene glycols in equipment operated in or near the water.

11. This Hydraulic Project Approval does not authorize equipment crossings of the stream.

CONSTRUCTION-RELATED SEDIMENT, EROSION AND POLLUTION CONTAINMENT

12. Protect all disturbed areas from erosion. Maintain erosion and sediment control until all work and cleanup of the job site is complete.

13. Straw used for erosion and sediment control, must be certified free of noxious weeds and their seeds.

14. Stop all hydraulic project activities except those needed to control erosion and siltation, if flow conditions arise that will result in erosion or siltation of waters of the state.

15. Route construction water (wastewater) from the project to an upland area above the limits of anticipated floodwater. Remove fine sediment and other contaminants before discharging the construction water to waters of the state.

IN-WATER WORK AREA ISOLATION USING A TEMPORARY BYPASS

16. Isolate fish from the work area by using either a total or partial bypass to reroute the stream through a temporary channel or pipe.

17. Provide fish passage during times of the year when fish are expected to migrate.

18. Sequence the work to minimize the duration of dewatering.

19. Use the least-impacting feasible method to temporarily bypass water from the work area. Consider the physical characteristics of the site and the anticipated volume of water flowing through the work area.



HYDRAULIC PROJECT APPROVAL

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20. The hydraulic capacity of the stream bypass must be equal to or greater than the 100-year peak flow event expected when the bypass will be operated.
21. Design the temporary bypass to minimize the length of the dewatered stream channel.
22. During all phases of bypass installation and decommissioning, maintain flows downstream of the project site to ensure survival of all downstream fish.
23. Install the temporary bypass before starting other construction work in the wetted perimeter.
24. Install a cofferdam or similar device at the upstream and downstream end of the bypass to prevent backwater from entering the work area.
25. Return diverted water to the channel immediately downstream of the work area. Dissipate flow energy from the diversion to prevent scour or erosion of the channel and bank.
26. If the diversion inlet is a gravity diversion that provides fish passage, place the diversion outlet where it facilitates gradual and safe reentry of fish into the stream channel.
27. If the bypass is a pumped diversion, once started it must run continuously until it is no longer necessary to bypass flows. This requires back-up pumps on-site and twenty-four-hour monitoring for overnight operation.
28. If the diversion inlet is a pump diversion in a fish-bearing stream, the pump intake structure must have a fish screen installed, operated, and maintained in accordance with RCW 77.57.010 and 77.57.070. Screen the pump intake with one of the following:
 - a) Perforated plate: 0.094 inch (maximum opening diameter);
 - b) Profile bar: 0.069 inch (maximum width opening); or
 - c) Woven wire: 0.087 inch (maximum opening in the narrow direction).The minimum open area for all types of fish screens is twenty-seven percent. The screened intake facility must have enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second. Maintain fish screens to prevent injury or entrapment of fish.
29. The fish screen must remain in place whenever water is withdrawn from the stream through the pump intake.
30. Remove fish screens on dewatering pumps in the isolated work area only after all fish are safe and excluded from the work area.
31. Isolate pump hose intakes with block nets so that fish cannot get near the intake.

FISH LIFE REMOVAL

32. All persons participating in capture and removal must have training, knowledge, and skills in the safe handling of fish life.
33. Place block nets upstream and downstream of the in-water work area before capturing and removing fish life.
34. Capture and safely move fish life from the work area to the nearest suitable free-flowing water.

DREDGING



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
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Olympia, WA 98504-3234
(360) 902-2200

Issued Date: March 10, 2017
Project End Date: March 10, 2020

Permit Number: 2017-4-141+01
FPA/Public Notice Number: N/A
Application ID: 4099

35. Do not dredge in fish spawning areas except to remove clumps of vegetation from the channel. For the purpose of this Hydraulic Project Approval, spawning areas are defined as portions of the streambed with rounded gravel deposits.

36. Work in the dry water-course (when no natural flow is occurring in the channel, or when flow is diverted around the job site).

37. Accomplish dredging by starting at the upstream end of the job site boundary and working downstream.

38. To avoid fish stranding following construction, the bed must not contain pits, potholes, or large depressions upon completion of the dredging.

39. Dispose of dredged bed materials outside the flood plain so materials will not reenter waters of the state.

DEMOBILIZATION AND CLEANUP

40. Seed areas disturbed by construction activities with a native seed mix suitable for the site that has at least one quick-establishing plant species.

41. Complete replanting of riparian vegetation during the first dormant season (late fall through late winter) after project completion per the approved plan. Maintain plantings for at least three years to ensure at least eighty percent of the plantings survive. Failure to achieve the eighty percent survival in year three will require you to submit a plan with follow-up measures to achieve requirements or reasons to modify requirements.

42. Install fencing or other structures to prevent livestock, wildlife, or unauthorized persons from accessing the replanted riparian and wetland sites until the plantings are well established.

43. Upon completion of the project, remove all materials or equipment from the site and dispose of all excess spoils and waste materials in an upland area above the limits of anticipated floodwater.

44. Return water flow slowly to the in-water work area to prevent the downstream release of sediment laden water. If necessary, install silt fencing above the bypass outlet to capture sediment during re-watering of the channel.

45. Remove temporary erosion and sediment control methods after job site is stabilized or within three months of project completion, whichever is sooner.

LOCATION #1:	Site Name: Willow Creek 11720 Unoco Rd, Edmonds, WA 98020					
WORK START:	March 10, 2017			WORK END:	March 10, 2020	
<u>WRIA</u>	<u>Waterbody:</u>			<u>Tributary to:</u>		
08 - Cedar - Sammamish	Various			Various		
<u>1/4 SEC:</u>	<u>Section:</u>	<u>Township:</u>	<u>Range:</u>	<u>Latitude:</u>	<u>Longitude:</u>	<u>County:</u>
NE 1/4	26	27 N	03 E	47.80497	-122.39013	Snohomish



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: March 10, 2017
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Location #1 Driving Directions

Depart I-5 S 3.3 mi. At exit 177, take ramp right for WA-104 West toward Edmonds / Kingston Ferry - 1.5 mi. Keep right to stay on WA-104 W / Edmonds Way - 0.1 mi. Keep right onto WA-104 / Edmonds Way - 2.4 mi. Keep right to stay on WA-104 W / Edmonds Way - 0.6 mi. Turn left onto Pine St - 0.1 mi. Turn right onto Unoco Rd (Gated road) - 0.3 mi. Make a U-turn to stay on Unoco Rd - 512 ft. Arrive at 11720 Unoco Rd, Edmonds, WA 98020

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day and/or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.



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MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA unless this is a General HPA. If this is a General HPA you must use the Major Modification process described below. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. Minor modifications do not require you to pay additional application fees or be issued a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. Do not include payment with your request. You should allow up to 45 days for the department to process your request.

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you paid an application fee for your original HPA you must pay an additional \$150 for the major modification. If you did not pay an application fee for the original HPA, no fee is required for a change to it. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, payment if the original application was subject to an application fee, and the requestor's signature. Send your written request and payment, if applicable, by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to HPAapplications@dfw.wa.gov, but must send a check or money order for payment by surface mail. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.



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A. **INFORMAL APPEALS:** WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, 600 Capitol Way North, Olympia, Washington 98501-1091; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee will conduct an informal hearing and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. **FORMAL APPEALS:** WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, 600 Capitol Way North, Olympia, Washington 98501-1091; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. **FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS:** If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

Habitat Biologist Jamie.Bails@dfw.wa.gov
Jamie Bails 425-775-1311, Ext:309

for Director
WDFW

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Summary of Permit Report Submittals

Refer to the Special and General Conditions of this permit for additional submittal requirements.

Permit Section	Submittal	Frequency	First Submittal Date
S3.A	Discharge Monitoring Report	Monthly	December 28, 2016
S3.E	Reporting Permit Violations	As necessary	
S3.F	Other Reporting	As necessary	
S4.A	Updated Operations and Maintenance Manual	1/permit cycle, updates submitted as necessary	March 31, 2017
S4.B	Reporting Bypasses	As necessary	
S5	Application for Permit Renewal	1/permit cycle	April 30, 2021
S6	Annual Groundwater Quality Evaluation	Annually	November 1, 2017
G1	Notice of Change in Authorization	As necessary	
G4	Permit Application for Substantive Changes to the Discharge	As necessary	
G5	Engineering Report for Construction or Modification Activities	As necessary	
G7	Notice of Permit Transfer	As necessary	
G10	Duty to Provide Information	As necessary	
G13	Payment of Fees	As assessed	
G21	Compliance Schedules	As necessary	

Special Conditions

S1. Discharge limits

S1.A. Treated groundwater discharge

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit, the Permittee is authorized to discharge treated groundwater to Willow Creek at Outfall 002 subject to complying with the following limits:

Effluent Limitations at Point of Compliance (after treatment): Monitoring Point 2 Latitude: 47.80698°N Longitude: 122.389484°W	
Parameter	Maximum Daily Effluent Limit ^a
Flow1 (dewatering from excavation, DE1)	15 gpm
Flow2 (from Dual Phase Extraction, DPE)	100 gpm
pH	Between 6 and 9 standard units
Benzene	16 µg/L
TPH-G ^b	800 µg/L
TPH-D ^c	500 µg/L
Total cPAHs ^d	0.00013 µg/L ^e
Chitosan Acetate	0.2 mg/L
^a The maximum daily effluent limitation is defined as the highest allowable daily discharge except for pH and Dissolved Oxygen. The daily discharge means the discharge of a pollutant measured during a calendar day.	
^b TPH-G is defined as total petroleum hydrocarbons-gasoline range organics.	
^c TPH-D is defined as total petroleum hydrocarbons-diesel range organics.	
^d cPAHs means carcinogenic polycyclic aromatic hydrocarbons. Total cPAHs is the sum of benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, benzo(a)pyrene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene concentrations that are adjusted using toxicity equivalency factors to represent a total benzo(a)pyrene concentration. The toxicity equivalency factors published in WAC 173-340-900, Table 708-2 are to be used for making the adjustments.	
^e The daily maximum effluent limit for total cPAHs is 0.00013 µg/L. The quantitation level (QL) for PAHs is 0.05 µg/L, greater than the effluent limit, using the approved analytical test method EPA 625. Therefore, the QL will be used for assessment of compliance with the effluent limit. This QL will be referred to as enforcement limit in this permit.	

S2. Monitoring requirements

S2.A. Monitoring schedule

The Permittee must monitor the wastewater according to the following schedule. The Permittee must use the specified analytical methods unless the method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136. If the Permittee uses an alternative method, not specified in the permit, it must report the test method, Detection Limit (DL), and Quantitation Level (QL) on the discharge monitoring report or in the required report. If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit and a QL to Ecology with appropriate laboratory documentation.

Parameter ^b	Units	Minimum Sampling Frequency	Sample Type	Analytical Method
Flow1 (dewatering from excavation, DE1)	gpm	Batch	Metered	N/A
Flow2 (from Dual Phase Extraction, DPE)	gpm	Weekly	Metered	N/A
pH	Standard Units	Weekly	Grab	pH meter ^a
Chitosan acetate ^d	µg/L	Weekly	Grab	Chitosan Field Screening Test (must show concentration below 0.2 mg/L)
Benzene	µg/L	Weekly	Grab	EPA 624 (with DL and QL less than 1 µg/L)
TPH-G	µg/L	Weekly	Grab	NWTPH-G _x
TPH-D	µg/L	Weekly	Grab	NWTPH-D _x
cPAH	µg/L	Weekly	Grab	EPA 625 (with DL and QL equal to or less than 0.05 µg/L) ^c
Benzo(a)anthracene	µg/L	Weekly	Grab	EPA 625 (with DL and QL equal to or less than 0.05 µg/L) ^c
Benzo(b)fluoranthene	µg/L	Weekly	Grab	EPA 625 (with DL and QL equal to or less than 0.05 µg/L) ^c
Benzo(k)fluoranthene	µg/L	Weekly	Grab	EPA 625 (with DL and QL equal to or less than 0.05 µg/L) ^c
Chrysene	µg/L	Weekly	Grab	EPA 625 (with DL and QL equal to or less than 0.05 µg/L) ^c
Benzo(a)pyrene	µg/L	Weekly	Grab	EPA 625 (with DL and QL equal to or less than 0.05 µg/L) ^c
Dibenzo(a,h)anthracene	µg/L	Weekly	Grab	EPA 625 (with DL and QL equal to or less than 0.05 µg/L) ^c
Indeno(1,2,3-c,d)pyrene	µg/L	Weekly	Grab	EPA 625 (with DL and QL equal to or less than 0.05 µg/L) ^c
<p>^a pH can be measured using a pH meter in the field, equivalent to SM4500-H+B. The calibration frequency specifications and method must be followed in accordance with the manufacturer's recommendations.</p> <p>^b The final effluent sample point is defined as the nearest accessible point after final treatment and prior to discharge to Willow Creek.</p> <p>^c The approved analytical test methods for benzene and cPAHs are EPA 624 and EPA 625, respectively. The detection limit and quantitative level for benzene must be less than 1 µg/L, and the detection limit and quantitative level for cPAHs must be equal to or less than 0.05 µg/L, for each component.</p> <p>^d Chitosan-enhanced sand filtration technologies and use designations are also listed in Ecology website http://www.ecy.wa.gov/programs/wq/stormwater/newtech/technologies.html</p>				

S2.B. Sampling and analytical procedures

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136 (or as applicable in 40 CFR subchapters N [Parts 400–471] or O [Parts 501-503]) unless otherwise specified in this permit. Ecology may only specify alternative methods for parameters without limits and for those parameters without an EPA approved test method in 40 CFR Part 136.

S2.C. Laboratory accreditation

The Permittee must ensure that all monitoring data required by Ecology for permit-specified parameters is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. Flow, temperature, settleable solids, conductivity, pH, chitosan acetate, and internal process control parameters are exempt from this requirement.

S3. Reporting and recording requirements

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

S3.A. Reporting

The first monitoring period begins on the effective date of the permit. The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on the electronic Discharge Monitoring Report (DMR) form provided by Ecology within WAWebDMR. Include data for each of the parameters tabulated in Special Condition S2 and as required by the form. Report a value for each day sampling occurred (unless specifically exempted in the permit) and for the summary values (when applicable) included on the electronic form.

To find out more information and to sign up for WAWebDMR go to:
<http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>

If unable to submit electronically (for example, if you do not have an internet connection), the Permittee must contact Ecology to request a waiver and obtain instructions on how to obtain a paper copy DMR.

2. Enter the “no discharge” reporting code for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate, if the Permittee did not discharge wastewater or a specific pollutant during a given monitoring period.

3. Report single analytical values below the detection level as “less than the detection level (DL) by entering “<” followed by the numeric value of the detection level (e.g. “< 2.0”) on the DMR. If the method used did not meet the minimum DL and quantitation level (QL) identified in the permit, report the actual QL and DL in the comments or in the location provided.
4. Report the test method used for analysis in the comments if the laboratory used an alternative method not specified in the permit and as allowed in S2.
5. Calculate average values (unless otherwise specified in the permit) using:
 - a. The reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value.
 - b. One-half the detection value (for values reported below detection) if the laboratory detected the parameter in another sample for the reporting period.
 - c. Zero (for values reported below the detection level) if the laboratory did not detect the parameter in another sample for the reporting period.
6. If the Permittee has obtained a waiver from electronic reporting or if submitting prior to the compliance date, the Permittee must submit a paper copy of the laboratory report providing the following information: date sampled, sample location, date of analysis, parameter name, CAS number, analytical method/number, detection level (DL), laboratory quantitation level (QL), reporting units, and concentration detected.

The contract laboratory reports must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter.
7. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.
8. Submit DMRs for parameters with the monitoring frequencies specified in S2 at the reporting schedule identified below. The Permittee must:
 - a. Submit **monthly** DMRs by the 28th day of the following month.
9. Submit reports to Ecology online using Ecology’s electronic WAWebDMR submittal forms (electronic DMRs) as required above. Send paper reports to Ecology at:

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008-5452

S3.B. Records retention

The Permittee must retain records of all monitoring information for a minimum of three (3) years. Such information must include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. The Permittee must extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

S3.C. Recording of results

For each measurement or sample taken, the Permittee must record the following information:

1. The date, exact place, method, and time of sampling or measurement.
2. The individual who performed the sampling or measurement.
3. The dates the analyses were performed.
4. The analytical techniques or methods used.
5. The results of all analyses.

S3.D. Additional monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by Special Condition S2 of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR unless otherwise specified by Special Condition S2.

S3.E. Reporting permit violations

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.
2. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within thirty (30) days of sampling.

a. Twenty-four-hour reporting

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at (425) 649-7078, within 24 hours from the time the Permittee becomes aware of any of the following circumstances:

1. Any noncompliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.
2. Any unanticipated bypass that causes an exceedance of any effluent limit in the permit (See Part S4.B., "Bypass Procedures").
3. Any upset that causes an exceedance of an effluent limit in the permit (See G.15, "Upset").
4. Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Section S1.A of this permit.
5. Any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limit in the permit.

b. Report within five days

The Permittee must also submit a written report within five days of the time that the Permittee becomes aware of any reportable event under subparts a or b, above. The report must contain:

1. A description of the noncompliance and its cause.
2. The period of noncompliance, including exact dates and times, if known.
3. The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
4. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
5. If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

c. Waiver of written reports

Ecology may waive the written report required in S3.E.c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report.

d. All other permit violation reporting

The Permittee must report all permit violations, which do not require immediate or within 24 hour reporting, when it submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in S3.E.c, above. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

S3.F. Other reporting

1. Spills of oil or hazardous materials

The Permittee must report a spill of oil or hazardous materials in accordance with the requirements of RCW 90.56.280 and chapter 173-303-145. The Permittee can obtain further instructions at the following website:
<http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm> .

2. Failure to submit relevant or correct facts

When the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to Ecology, it must submit such facts or information promptly.

S3.G. Maintaining a copy of this permit

The Permittee must keep a copy of this permit at the facility and make it available upon request to Ecology inspectors.

S4. Operation and maintenance

The Permittee must, at all times, properly operate and maintain all facilities or systems of treatment and control (and related appurtenances), which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes keeping a daily operation logbook (paper or electronic), adequate laboratory controls, and appropriate quality assurance procedures. This provision of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

The Permittee must schedule any facility maintenance, which might require interruption of wastewater treatment and degrade effluent quality, during non-critical water quality periods and carry this maintenance out in a manner approved by Ecology.

S4.A. Operations and maintenance (O&M) manual

1. O&M manual submittal and requirements

The Permittee must:

- a. Prepare the O&M Manual that meets the requirements of 173-240-150 WAC and submit it to Ecology for review by March 31, 2017. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).
- b. Review the O&M Manual at least annually and update the manual as needed.
- c. Submit to Ecology for review and approval substantial changes or updates to the O&M Manual whenever it incorporates them into the manual. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
- d. Keep the approved O&M Manual at the permitted facility.
- e. Follow the instructions and procedures of this manual.

2. O&M manual components

In addition to the requirements of WAC 173-240-150, the O&M Manual must include:

- a. Emergency procedures for plant shutdown and cleanup in the event of a wastewater system upset or failure.
- b. A review of system components which in the event of failure could pollute surface water or could impact human health. Provide a procedure for a routine schedule for checking the function of these components.
- c. Wastewater system maintenance procedures related to the generation of process wastewater.

- d. Any directions to maintenance staff when cleaning, or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (for example, defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine.)
- e. Wastewater sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.
- f. Specification for minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit.
- g. Treatment plant process control monitoring schedule.
- h. Specify other items on case-by-case basis such as O&M for any pump stations, lagoon liners, etc.

3. Treatment system operating plan

The Permittee must summarize the following information in the initial chapter of the O&M Manual entitled the "Treatment System Operating Plan." For the purposes of this permit, a Treatment System Operating Plan (TSOP) is a concise summary of specifically defined elements of the O&M Manual.

The TSOP must not conflict with the O&M Manual and must include the following information:

- a. A baseline operating condition, which describes the operating parameters and procedures, used to meet the effluent limits of S1 at the production levels used in developing these limits.
- b. In the event of production rates, which are below the baseline levels used to establish these limits, the plan must describe the operating procedures and conditions needed to maintain design treatment efficiency. The monitoring and reporting must be described in the plan.
- c. In the event of an upset, due to plant maintenance activities, severe stormwater events, startups or shut downs, or other causes, the plan must describe the operating procedures and conditions employed to mitigate the upset. The monitoring and reporting must be described in the plan.
- d. A description of any regularly scheduled maintenance or repair activities at the facility which would affect the volume or character of the wastes discharged to the wastewater treatment system and a plan for monitoring and treating/controlling the discharge of maintenance-related materials (such as cleaners, degreasers, solvents, etc.).

This plan must be updated and submitted, as necessary, to include requirements for any major modifications of the treatment system.

S4.B. Bypass procedures

This permit prohibits a bypass, which is the intentional diversion of waste streams from any portion of a treatment facility.

Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

This permit authorizes a bypass if it allows for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least ten (10) days before the date of the bypass.

2. Bypass is unavoidable, unanticipated, and results in noncompliance of this permit.

This permit authorizes such a bypass only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
 - b. No feasible alternatives to the bypass exist, such as:
 - The use of auxiliary treatment facilities.
 - Retention of untreated wastes.
 - Stopping production.
 - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
 - Transport of untreated wastes to another treatment facility or preventative maintenance, or transport of untreated wastes to another treatment facility.
 - c. The Permittee has properly notified Ecology of the bypass as required in Special Condition S3.E of this permit.
3. If bypass is anticipated and has the potential to result in noncompliance of this permit.
 - a. The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:
 - A description of the bypass and its cause.
 - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.

- A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
 - The minimum and maximum duration of bypass under each alternative.
 - A recommendation as to the preferred alternative for conducting the bypass.
 - The projected date of bypass initiation.
 - A statement of compliance with SEPA.
 - A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
 - Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.
- b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during preparation of the engineering report or facilities plan and plans and specifications and must include these to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.
- c. Ecology will consider the following prior to issuing an administrative order for this type of bypass:
- If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
 - If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
 - If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request. Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Ecology will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

S5. Application for permit renewal or modification for facility changes

The Permittee must submit an application for renewal of this permit by April 30, 2021. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

The Permittee must also submit a new application or supplement at least sixty (60) days prior to commencement of discharges, resulting from the activities listed below, which may result in permit violations. These activities include any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility.

S6. Annual groundwater quality evaluation

The Permittee must submit a groundwater quality report to Ecology by November 1, 2017, and annually thereafter. The report must include, but is not limited to, the following:

- A discussion and evaluation of the effectiveness of the groundwater remediation system.
- The data should be presented on drawings by mapping the distribution (sample date and measured concentration) in groundwater for each containment. One map for each containment should be presented.
- The groundwater quality data for TPH-GRO, TPH-DRO, TPH-HO, cPAHs, and benzene concentrations collected during the previous calendar year from wells distributed across the site.
- The volume of groundwater pumped through the groundwater treatment plant.
- A plan view of monitoring well locations.

For the purpose of meeting this requirement, groundwater quality monitoring and reporting results required by the Agreed Order may be submitted.

S7. Stormwater Pollution Prevention Plan

The Permittee must prepare and properly implement an adequate Stormwater Pollution Prevention Plan (SWPPP) for construction activity in accordance with the requirements of this permit beginning with initial soil disturbance and until final stabilization. A copy of the SWPPP must be kept on-site and made available for geology inspector.

S7.A. The Permittee's SWPPP must meet the following objectives:

1. To implement best management practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate, or prevent stormwater contamination and water pollution from construction activity. BMPs are listed in the *Stormwater Management Manual for Western Washington* (most recent edition).
2. To prevent violations of surface water quality, ground water quality, or sediment management standards.
3. To control peak volumetric flow rates and velocities of stormwater discharges.

S7.B. General requirements

1. The SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:
 - a. Information about existing site conditions (topography, drainage, soils, vegetation, etc.).
 - b. Potential erosion problem areas.
 - c. The actions to be taken if BMP performance goals are not achieved, for example, a contingency plan for additional treatment and/or storage of stormwater that would violate the water quality standards if discharged.
 - d. Document BMP implementation and maintenance in the site logbook.

The Permittee must modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

S7.C. SWPPP – Narrative contents and requirements

The Permittee must include each of the elements below in the narrative of the SWPPP and implement them unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP.

1. Preserve Vegetation/Mark Clearing Limits
 - a. Before beginning land-disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.
 - b. Retain the duff layer, native top soil, and natural vegetation in an undisturbed state to the maximum degree practicable.
2. Establish Construction Access
 - a. Limit construction vehicle access and exit to one route, if possible.
 - b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking sediment onto roads.
 - c. Locate wheel wash or tire baths on-site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.
 - d. If sediment is tracked off-site, clean the affected roadway thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.
 - e. Conduct street washing only after sediment removal. Control street wash wastewater by pumping back on-site or otherwise preventing it from discharging into systems tributary to waters of the State.

3. Control Flow Rates

- a. Protect properties and waterways downstream of development sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by local plan approval authority.

4. Install Sediment Controls

The Permittee must design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the Permittee must design, install, and maintain such controls to:

- a. Construct sediment control BMPs (sediment ponds, traps, filters, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.
- b. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.
- c. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility.

5. Stabilize Soils

- a. The Permittee must stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to, temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.
- b. The Permittee must control stormwater volume and velocity within the site to minimize soil erosion.
- c. The Permittee must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
- d. The Permittee must stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.
- e. The Permittee must stabilize soil stockpiles from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.
- f. The Permittee must minimize the amount of soil exposed during construction activity.
- g. The Permittee must minimize the disturbance of steep slopes.

- h. The Permittee must minimize soil compaction and, unless infeasible, preserve topsoil.

6. Protect Drain Inlets

- a. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
- b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

7. Control Pollutants

Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. The Permittee must:

- a. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on-site in a manner that does not cause contamination of stormwater.
- b. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume contained in the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.
- c. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.
- d. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.
- e. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.
- f. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to, bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters. (Also refer to the definition for "concrete wastewater" in Appendix A--Definitions.)

- g. Adjust the pH of stormwater if necessary to prevent violations of water quality standards.
 - h. Assure that washout of concrete trucks is performed off-site or in designated concrete washout areas only. Do not wash out concrete trucks onto the ground, or into storm drains, open ditches, streets, or streams. Do not dump excess concrete on-site, except in designated concrete washout areas. Concrete spillage or concrete discharge to surface waters of the State is prohibited.
 - i. Obtain written approval from Ecology before using chemical treatment other than CO₂ or dry ice to adjust pH.
8. Control Dewatering
- a. Permittees may discharge clean, non-turbid dewatering water, such as well-point ground water, to systems tributary to, or directly into surface waters of the State provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that "surface waters of the State" may exist on a construction site as well as off-site; for example, a creek running through a site.
 - b. Other treatment or disposal options may include:
 - i. Infiltration.
 - ii. Transport off-site in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.
 - iii. Ecology-approved on-site chemical treatment or other suitable treatment technologies.
 - iv. Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.
 - v. Use of a sedimentation bag with discharge to a ditch or swale for small volumes of localized dewatering.
 - c. Permittees must handle highly turbid or contaminated dewatering water separately from stormwater.
9. Maintain BMPs
- a. Permittees must maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function in accordance with BMP specifications.
 - b. Permittees must remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.

S7.D. SWPPP – Map contents and requirements

The Permittee's SWPPP must also include a vicinity map or general location map (for example, a USGS quadrangle map, a portion of a county or city map, or other appropriate map) with enough detail to identify the location of the construction site and receiving waters within one mile of the site.

The SWPPP must also include a legible site map (or maps) showing the entire construction site. The following features must be identified, unless not applicable due to site conditions:

1. The direction of north, property lines, and existing structures and roads.
2. Cut and fill slopes indicating the top and bottom of slope catch lines.
3. Approximate slopes, contours, and direction of stormwater flow before and after major grading activities.
4. Areas of soil disturbance and areas that will not be disturbed.
5. Locations of structural and nonstructural controls (BMPs) identified in the SWPPP.
6. Locations of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas.
7. Locations of all surface water bodies, including wetlands.
8. Locations where stormwater or non-stormwater discharges off-site and/or to a surface water body, including wetlands.
9. Location of water quality sampling station(s), if sampling is required by state or local permitting authority.
10. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

General Conditions

G1. Signatory requirements

1. All applications, reports, or information submitted to Ecology must be signed and certified.
 - a. In the case of corporations, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
 - The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - In the case of a partnership, by a general partner.
 - In the case of sole proprietorship, by the proprietor.
 - In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity must be submitted by the public entity.
2. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to Ecology.
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3. Changes to authorization. If an authorization under paragraph G1.2, above, is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G1.2, above, must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section must make the following certification:

“I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

G2. Right of inspection and entry

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

1. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
2. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
3. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
4. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G3. Permit actions

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the Permittee) or upon Ecology’s initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

1. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
 - a. Violation of any permit term or condition.
 - b. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
 - c. A material change in quantity or type of waste disposal.
 - d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.

- e. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.
 - f. Nonpayment of fees assessed pursuant to RCW 90.48.465.
 - g. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
2. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:
- a. A material change in the condition of the waters of the state.
 - b. New information not available at the time of permit issuance that would have justified the application of different permit conditions.
 - c. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
 - d. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
 - e. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
 - f. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
 - g. Incorporation of an approved local pretreatment program into a municipality's permit.
3. The following are causes for modification or alternatively revocation and reissuance:
- a. When cause exists for termination for reasons listed in 1.a through 1.g of this section, and Ecology determines that modification or revocation and reissuance is appropriate.
 - b. When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

G4. Reporting planned changes

The Permittee must, as soon as possible, but no later than one hundred eighty (180) days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

1. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b).
2. A significant change in the nature or an increase in quantity of pollutants discharged.
3. A significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be

modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G5. Plan review required

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least one hundred eighty (180) days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

G6. Compliance with other laws and statutes

Nothing in this permit excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. Transfer of this permit

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to Ecology.

1. Transfers by Modification

Except as provided in paragraph (2) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

2. Automatic Transfers

This permit may be automatically transferred to a new Permittee if:

- a. The Permittee notifies Ecology at least thirty (30) days in advance of the proposed transfer date.
- b. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.
- c. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G8. Reduced production for compliance

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G9. Removed substances

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G10. Duty to provide information

The Permittee must submit to Ecology, within a reasonable time, all information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology upon request, copies of records required to be kept by this permit.

G11. Other requirements of 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. Additional monitoring

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G13. Payment of fees

The Permittee must submit payment of fees associated with this permit as assessed by Ecology.

G14. Penalties for violating permit conditions

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof must be punished by a fine of up to ten thousand dollars (\$10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit may incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars (\$10,000) for every such violation. Each and every such violation is a separate and distinct offense, and in case of a continuing violation, every day's continuance is deemed to be a separate and distinct violation.

G15. Upset

Definition – “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the Permittee can identify the cause(s) of the upset.
2. The permitted facility was being properly operated at the time of the upset.
3. The Permittee submitted notice of the upset as required in Special Condition S3.E.
4. The Permittee complied with any remedial measures required under S3.E of this permit.

In any enforcement action the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G16. Property rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

G17. Duty to comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G18. Toxic pollutants

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G19. Penalties for tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment must a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

G20. Reporting requirements applicable to existing manufacturing, commercial, mining, and silvicultural dischargers

The Permittee belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify Ecology as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"
 - a. One hundred micrograms per liter (100 µg/L).
 - b. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.
 - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
 - d. The level established by the Director in accordance with 40 CFR 122.44(f).
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"
 - a. Five hundred micrograms per liter (500 µg/L).
 - b. One milligram per liter (1 mg/L) for antimony.
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
 - d. The level established by the Director in accordance with 40 CFR 122.44(f).

G21. Compliance schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than fourteen (14) days following each schedule date.

1. The following information is available for the company's operations in 2023:

Revenue: \$1,000,000
Cost of Sales: \$600,000
Operating Expenses: \$200,000
Interest Expense: \$50,000
Income Tax Expense: \$30,000

Required: Calculate the company's operating profit, EBITDA, and Earnings Before Tax (EBT).

Operating Profit = Revenue - Cost of Sales - Operating Expenses
= \$1,000,000 - \$600,000 - \$200,000 = \$200,000

EBITDA = Operating Profit + Depreciation and Amortization

EBT = Operating Profit + Interest Expense

The company's operating profit is \$200,000.

Operating Profit = \$200,000

Fact Sheet for NPDES Permit WA0991007

Former Unocal Edmonds Bulk Terminal

Effective Date: November 1, 2016

Purpose of this fact sheet

This fact sheet explains and documents the decisions the Department of Ecology (Ecology) made in drafting the proposed National Pollutant Discharge Elimination System (NPDES) permit for Former Unocal Edmonds Bulk Fuel Terminal No. 0178, in Edmonds, WA.

This fact sheet complies with Section 173-220-060 of the Washington Administrative Code (WAC), which requires Ecology to prepare a draft permit and accompanying fact sheet for public evaluation before issuing an NPDES permit.

Ecology makes the draft permit and fact sheet available for public review and comment at least thirty (30) days before issuing the final permit. Copies of the fact sheet and draft permit for former Unocal Edmonds Bulk Terminal No. 0178 (Chevron Environmental Management Company assumes the responsibility for this cleanup site), NPDES permit WA0991007, were available for public review and comment from August 5, 2016, to September 6, 2016. For more details on preparing and filing comments about these documents, please see *Appendix A – Public Involvement Information*.

Chevron Environmental Management Company (Chevron) has reviewed the draft permit and fact sheet for factual accuracy. Ecology has corrected any errors or omissions regarding the facility's location, history, discharges, or receiving water prior to publishing this draft fact sheet for public notice.

After the public comment period closes, Ecology will summarize substantive comments and provide responses to them.

Summary

Chevron is proposing to conduct remedial cleanup activities to clean up petroleum contamination at the former Unocal Edmonds site beginning late 2016. Cleanup will consist of excavation of Detention Basin 2, and operation of a dual-phase extraction system to clean up contaminated groundwater, soil, and soil vapor in the area along a Washington State Department of Transportation (WSDOT) stormwater pipe which crosses the site. Past and current interim action cleanup activities and groundwater monitoring are being conducted at the site under Agreed Order No. DE 4460 with Ecology's Toxic Cleanup Program.

The treated excavation dewatering water and groundwater will be discharged through Outfall 002 to Willow Creek. The treatment system for the soil excavation activity and the dual phase extraction system is designed to operate at a maximum flow rate of 15 gpm, and 100 gpm, respectively.

The parameters proposed for the discharge include flow, pH, Benzene, TPH-G, TPH-D, and Total cPAH (consists of seven specific congeners). Chevron monitors for these pollutants under the Agreed Order.

Treated soil vapor will be discharged to the atmosphere under a Puget Sound Clean Air Agency permit.

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I. Introduction

The Federal Clean Water Act (FCWA, 1972, and later amendments in 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One mechanism for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES), administered by the federal Environmental Protection Agency (EPA). The EPA authorized the state of Washington to manage the NPDES permit program in our state. Washington State legislature accepted the delegation and assigned the power and duty for conducting NPDES permitting and enforcement to Ecology. The Legislature defined Ecology's authority and obligations for administration of the wastewater discharge permit program in 90.48 RCW (Revised Code of Washington).

The following regulations apply to industrial NPDES permits:

- Procedures Ecology follows for issuing NPDES permits (Chapter 173-220 WAC).
- Water quality criteria for surface waters (Chapter 173-201A WAC).
- Water quality criteria for ground waters (Chapter 173-200 WAC).
- Whole effluent toxicity testing and limits (Chapter 173-205 WAC).
- Sediment management standards (Chapter 173-204 WAC).
- Submission of plans and reports for construction of wastewater facilities (Chapter 173-240 WAC).

These rules require any industrial facility owner/operator to obtain an NPDES permit before discharging wastewater to state waters. They also help define the basis for limits on each discharge and for performance requirements imposed by the permit.

Under the NPDES permit program and in response to a completed and accepted permit application, Ecology must prepare a draft permit and accompanying fact sheet, and make them available for public review before final issuance. Ecology must also publish an announcement (public notice) telling people where they can read the draft permit, and where to send their comments, during a period of thirty days (WAC 173-220-050). (See *Appendix A – Public Involvement Information* for more detail about the public notice and comment procedures). After the public comment period ends, Ecology may make changes to the draft NPDES permit in response to comment(s). Ecology will summarize the responses to comments and any changes to the permit in *Appendix E*.

II. Background Information

Table 1. General facility information

Facility information	
Applicant	Chevron Environmental Management Company
Facility name and location	Former Unocal Edmonds Bulk Fuel Terminal No. 0178 Edmonds, WA
Contact at facility	Name: Kim Jolitz Project Manager Telephone #: (925) 842-4707
Industry type	Soil Excavation, and Groundwater Extraction and Treatment
Type of treatment	Chitosan Polymer, sand filtration, granular activated carbon, and dual-phase pump and treat system for the groundwater
SIC code	4959, Groundwater Site Remediation Devices
Facility location (NAD83/WGS84 reference datum)	Latitude: 47.806263°N Longitude: 122.389455°W
Discharge waterbody name and location (NAD83/WGS84 reference datum)	Willow Creek Outfall 002: Latitude: 47.806976°N Longitude: 122.274722°W

Permit Status	
Application for permit submittal date	April 6, 2015
Date of Ecology acceptance of application	July 17, 2015

Inspection Status	
Date of last non-sampling inspection	July 16, 2015

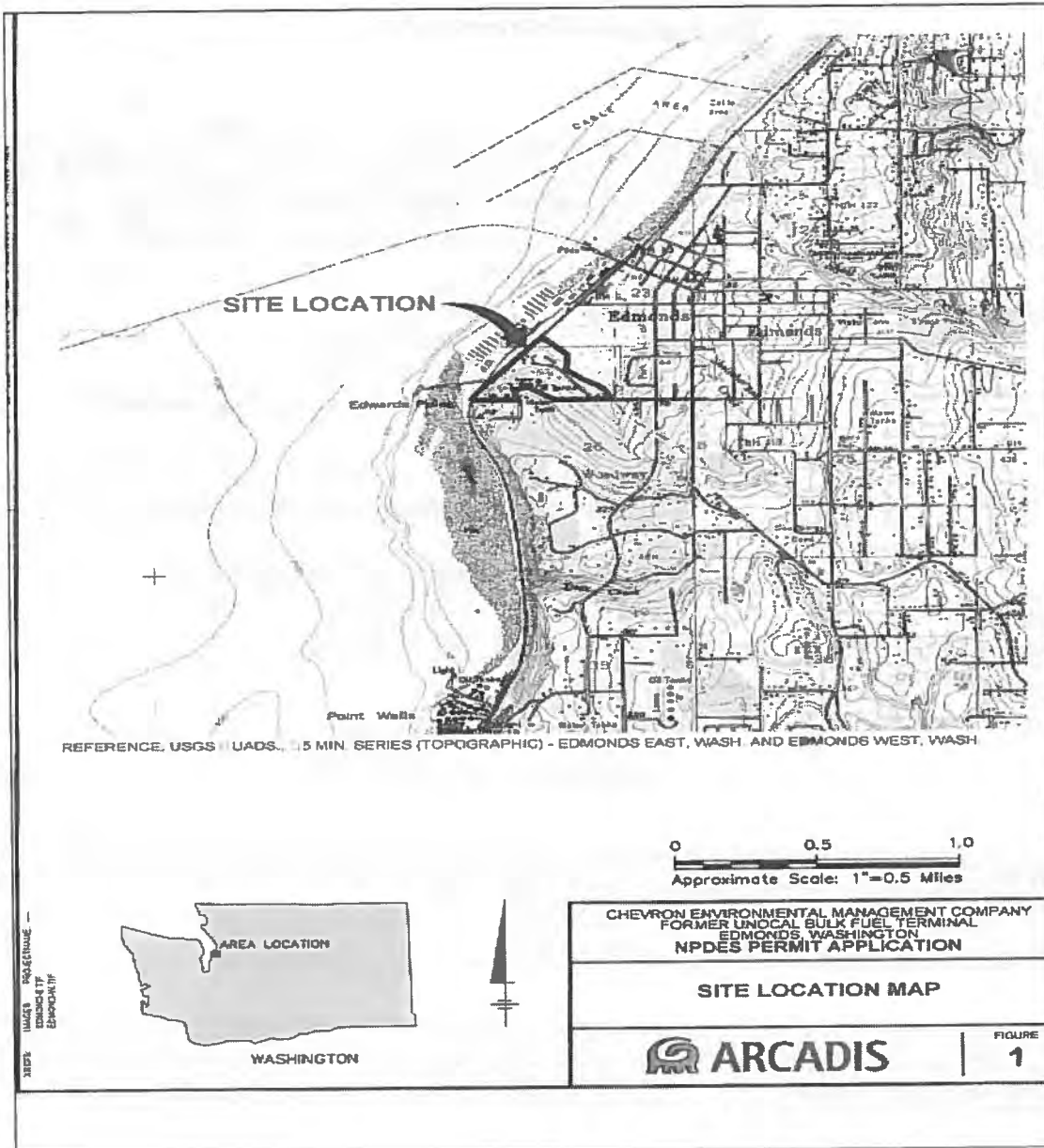


Figure 1. Former Unocal Edmonds Bulk Fuel Terminal 0178 vicinity and site maps

A. Facility description

Background

Unocal operated the terminal from 1923 to 1991 at the site. Historical operations at the site conducted by Unocal included storage and distribution of petroleum products, including gasoline, diesel fuel, and bunker fuel. An asphalt plant was also operated on the site between 1953 and the late 1970s. The terminal consisted of a dock and an Upper and a Lower Yard. Petroleum products were pumped from marine vessels moored at the dock to storage tanks in the Upper Yard, which was on a hill above the Lower Yard. Products were gravity-fed and pumped to loading racks in the Lower Yard for transport by truck and train to customers.

Chevron completed purchase of Unocal Corporation in 2005 and has assumed responsibility for cleanup activities for this former Unocal Edmonds terminal.

Cleanup actions and site investigations have been ongoing at this site since 1994. In 1993, Unocal entered into Agreed Order No. DE-92TC-N828, which was superseded in 2007 by Agreed Order No. DE 4460. In accordance with the 2007 Agreed Order, Unocal conducted interim action cleanup activities at the Upper and Lower Yards. Details of these cleanup activities completed in 2007/2008 have been documented in the Interim Action Work Plan (ARCADIS 2014).

Cleanup remediation has been completed in the Upper Yard. Ecology certified the Upper Yard to be suitable for residential use in 2003 and the Point Edwards Condominiums were subsequently constructed.

The remaining areas of contamination include the stormwater Detention Basin 2 area and the vicinity of a Washington State Department of Transportation (WSDOT) storm drain crossing the site in the Lower Yard.

Detention Basins (DB) 1 and 2, and WSDOT stormwater line

This site has two stormwater detention basins (DB-1 and DB-2). They are located in the northern part of the Lower Yard. Stormwater collected on-site is drained into DB-2 by means of gravity flow. DB-2 serves as a stormwater collection area, which drains into Willow Creek via Outfall 002.

DB-1 serves as a retention pond for overflow from DB-2 during storm events. DB-1 is an unlined pond with an aboveground pump and a piping system connected to Outfall 002 on the bank of Willow Creek. DB-2 has an impermeable liner, two submersible pumps, and a piping system to the DB-2 Outfall.

The WSDOT stormwater line runs across the Lower Yard, along lower Unoco Road and out to Puget Sound. During the 2007/2008 interim action excavation activities, the soil along the WSDOT stormwater line was found to exceed the cleanup levels. However, the contaminated area was unable to be excavated without compromising the integrity of the line. Polyethylene sheeting was left in place to demarcate the excavation limits adjacent to the WSDOT stormwater line.

Proposed remediation work

Chevron proposes to remove petroleum-contaminated soil in the area of DB-2 and haul it off-site for disposal. Soil excavation is expected to result in cleanup of groundwater. This excavation activity will include placing temporary dams in Willow Creek to protect it during excavation. Following excavation, the coffer dams will be removed and Willow Creek will be restored to its original stream bed.

Contaminated water produced from the excavations will be treated and discharged to Willow Creek.

Petroleum-contaminated soil and groundwater in the WSDOT storm drain vicinity will be cleaned up by a Dual-Phase Extraction system. Extraction wells will be used to pump contaminated water and vapor for treatment and discharge. Water will be treated and discharged to Willow Creek.

All wastewater produced during these cleanup activities will be discharged to Willow Creek, and regulated by the National Pollutant Discharge Elimination System (NPDES) Permit. Soil vapor will be treated and discharged to the atmosphere under a Puget Sound Clean Air Agency permit.

The cleanup of Detention Basin 2 area is expected to occur in the summer of 2017. It will require heavy equipment to excavate the soil and trucks to haul excavated soil away. Air monitoring and dust control measures will be performed.

The Dual-Phase Extraction System installation is expected to begin in late 2016. Drill rigs will be employed to install extraction wells, conveyance piping will be laid, and an equipment building will be brought onsite. The system is expected to operate for about six years.

Pollutants of concern

The pollutants expected to be present in the water generated from the excavation include total petroleum hydrocarbons (TPHs), total carcinogenic polycyclic aromatic hydrocarbons (cPAHs), benzene, and pH.

Wastewater treatment system

DB-2 area excavation: The treatment for dewatering water generated during excavation activities for DB-2 includes collecting and storing recovered water in a holding tank. From the holding tank, water will be treated with chitosan polymer, followed by sand filtration to remove entrained solids, then with granular activated carbon to polish and remove organic carbons in the water. The sand filter will be equipped with a back-pressure controlled automatic back-wash system.

Dual Phase Extraction (DPE): The preliminary design consists of an array of 11 groundwater extraction wells spaced approximately 40 to 60 feet apart, oriented along the alignment of the WSDOT stormwater line (See Figure 2). The water table in this area is encountered at approximately 5 feet below ground surface. Extraction wells are assumed to be approximately 24 feet deep and pump at a rate between 2 and 3 gpm each. Groundwater is pumped to a remediation treatment compound which houses a sediment settling tank, equalization tank, bag filter, and four granular activated carbon vessels for treatment prior to discharge to Willow Creek (see Figures 3 and 4).

Groundwater flow directions

The estimated shallow groundwater flow directions are to the northwest in the western part of the site, toward Detention Basin No. 1 in the central part of the Lower Yard, and to the northeast in the eastern part of the site. Groundwater flows toward Willow Creek (to the north) in the northeast part of the site, and radially into Detention Basin No. 1.

Perched groundwater occurs beneath the Upper Yard in isolated, laterally discontinuous zones surrounded by unsaturated soil.

Willow Creek and tidal basin

Willow Creek receives all stormwater from this site. Willow Creek also collects runoff from off-site areas northeast and east of the site (wetlands area, hatchery, and State Route 104) and from the southern off-site residential area which abuts the east half of the site's south edge.

The creek flows west from the site's northwest edge through an underground pipe into Puget Sound.

The site is located on the eastern side, within 1,000 feet of Puget Sound. Tides in the Edmonds part of Puget Sound range from approximately -3 to 13 feet relative to MLLW. The site is bounded on the northwest and northeast by Willow Creek, which carries surface runoff from areas east of the site to Puget Sound. North of Willow Creek lies a 23-acre freshwater and brackish water marsh (aka the Union Oil Marsh), owned by the City of Edmonds now, known as the Edmonds Marsh. The marsh is tidally influenced. Small creeks and ditches drain the upland areas to the east of the site.

Willow Creek and the tidal basin are saltwater influenced and vegetation is dominated by seashore saltgrass and Baltic rush, with oracle and seaside plantain as associated species.

The relative proportions of upgradient groundwater and surface water present in Willow Creek vary throughout the tidal cycle, as the relative hydraulic head difference between the surface water and upgradient groundwater fluctuates with the tide.

Discharge outfall (aka Outfall 002)

DB-2 is currently a stormwater collection system. Once excavation is complete, DB-2 will no longer exist. Prior to excavation, the stormwater collection system will be rerouted around the proposed excavation area and discharged directly into DB-1 through above ground hoses under the NPDES permit. Existing piping will be initially capped and then removed during excavation activities. After completion of DB-2 excavation, above-grade piping will be installed in DB-1 for discharge through outfall #002. Stormwater catch basins will be permanently routed to DB-1. Treated groundwater from the DPE system will also be discharged directly to DB-1. DB-1 discharges to Willow Creek via Outfall 002.

B. Description of the receiving water

Willow Creek runs along the east, northeast, north, and northwest boundaries of the site's Lower Yard. Willow Creek is approximately 10 feet wide and is underlain by silt and sand material. The creek banks on the property boundary are sloped (up to approximately 35%) and vegetated with native and non-native vegetation. Water depths in Willow Creek vary from 0 to 4 feet, depending on season and tidal cycles (ARCADIS 2012a). Willow Creek is tidally influenced, and it flows into a tidal basin. Edmonds Marsh is located to the northeast of the Lower Yard and is connected to Willow Creek. Willow Creek runs in a man-made drainage ditch and an underground piped culvert between Edmonds Marsh and Puget Sound.

The designated uses and criteria for Willow Creek are listed in WAC 172-201A-200 (fresh water designated uses and criteria). The designated uses listed in WAC 173-201A-200 include the following: aquatic life uses; primary contact for recreational uses; water supply uses; aquatic life uses; wildlife habitat; harvesting; commerce/navigation; boating and aesthetic enjoyment. Fish which have been observed in Willow Creek include Pacific Salmon, and ground fish.

C. Wastewater characterization

The concentration of pollutants in the discharge has been reported in the permit application. The tabulated data represents the anticipated flow and quality of the wastewater effluent under optimal conditions once the treatment system is in place. The wastewater effluent is reported to have the following characteristics:

Table 2. Effluent characterization

Parameter	Units	Average Value	Maximum Value
Wastewater from excavation			
Total Petroleum Hydrocarbons (TPH)	µg/L	5.61	250.9
Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs)	µg/L	0.00049	0.00149
pH	Standard Units	7.9	8.8
Turbidity	NTU	16.8	125
Treated water from Dual Phase Extraction System			
TPH	µg/L	9.09	234.16
cPAHs ¹	µg/L	0.00012	0.001195
Benzene	µg/L	1.52	59
¹ cPAHs means carcinogenic polycyclic aromatic hydrocarbons. Total cPAHs is the sum of benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, benzo(a)pyrene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene concentrations.			

D. State environmental policy act (SEPA) compliance

To meet the intent of SEPA, new discharges must undergo SEPA review during the permitting process. Chevron has filed a SEPA checklist with Ecology for the Interim Action at the Lower Yard of Unocal Edmonds Bulk Fuel Terminal. The Ecology Toxic Cleanup Program approved the SEPA checklist and issued the Determination of Non-significance (DNS) for this proposed work on July 6, 2015.

III. Proposed Permit Limits

Federal and state regulations require that effluent limits in an NPDES permit must be either technology- or water quality-based.

Technology-based limits are based upon the treatment methods available to treat specific pollutants. Technology-based limits are set by the EPA and published as a regulation, or Ecology develops the limit on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC).

Water quality-based limits are calculated so that the effluent will comply with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC), Model Toxics Control Act Cleanup Levels (Chapter 173-340 WAC), or the National Toxics Rule (40 CFR 131.36).

Ecology must apply the most stringent of these limits to each parameter of concern. These limits are described below.

The limits in this permit reflect information received in the application and from supporting reports (engineering, hydrogeology, etc.). Ecology evaluated the permit application and determined the limits needed to comply with the rules adopted by the state of Washington. Ecology does not develop effluent limits for all reported pollutants. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation.

Ecology does not usually develop limits for pollutants not reported in the permit application but which may be present in the discharge. The permit does not authorize discharge of the non-reported pollutants. During the five-year permit term, the facility's effluent discharge conditions may change from those conditions reported in the permit application. The facility must

notify Ecology if significant changes occur in any constituent [40 CFR 122.42(a)]. Until Ecology modifies the permit to reflect additional discharge of pollutants, a permitted facility could be violating its permit.

A. Design criteria/outfalls flow rates

Under WAC 173-220-150 (1)(g), flows and waste loadings must not exceed approved design criteria. Chevron submitted the Draft Interim Action Work Plan to Ecology on July 6, 2015. The draft work plan described the proposed remediation for the Lower Yard which contains petroleum hydrocarbon concentrations above the soil remediation levels and cleanup levels. Those areas in the Lower Yard include the vicinity of DB-2, and the WSDOT stormwater line.

B. Technology-based effluent limits

Ecology must ensure that facilities provide all known, available, and reasonable methods of prevention, control, and treatment (AKART) when it issues a discharge permit. The technology-based effluent limits proposed in this permit are as follows:

Table 3. Technology-based limits

Parameter		Maximum Daily Limit
Flow1 (dewatering water from excavation)		15 gpm
Flow2 (flow from Dual Phase Extraction)		100 gpm
Oily Sheen		No visible sheen
Chitosan Acetate		0.2 mg/L
Parameter	Daily Minimum	Daily Maximum
pH	6.0 standard units	9.0 standard units

C. Surface water quality-based effluent limits

The Washington State surface water quality standards (Chapter 173-201A WAC) are designed to protect existing water quality and preserve the beneficial uses of Washington's surface waters. Waste discharge permits must include conditions that ensure the discharge will meet the water quality standards (WAC 173-201A-510). Water quality-based effluent limits may be based on an individual waste load allocation or on a waste load allocation developed during a basin-wide total maximum daily load study (TMDL).

Numerical criteria for the protection of aquatic life and recreation

Numerical water quality criteria are listed in the Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the maximum levels of pollutants allowed in receiving water to protect aquatic life and recreation in and on the water. Ecology uses numerical criteria along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limits, the discharge must meet the water quality-based limits. The proposed effluent limits are listed in Section J (on page 15) of this fact sheet.

Numerical criteria for the protection of human health

The U.S. EPA has published 91 numeric water quality criteria for the protection of human health that are applicable to dischargers in Washington State (EPA, 1992). These criteria

are designed to protect humans from exposure to pollutants linked to cancer and other diseases, based on consuming fish and shellfish and drinking contaminated surface waters. The water quality standards also include radionuclide criteria to protect humans from the effects of radioactive substances.

Narrative criteria

Narrative water quality criteria (e.g., WAC 173-201A-240(1); 2006) limit the toxic, radioactive, or other deleterious material concentrations that the facility may discharge to levels below those which have the potential to:

- Adversely affect designated water uses.
- Cause acute or chronic toxicity to biota.
- Impair aesthetic values.
- Adversely affect human health.

Narrative criteria protect the specific designated uses of all fresh waters (WAC 173-201A-200, 2006) and of all marine waters (WAC 173-201A-210, 2006) in the state of Washington.

Antidegradation

Description--The purpose of Washington's Antidegradation Policy (WAC 173-201A-300-330; 2006) is to:

- Restore and maintain the highest possible quality of the surface waters of Washington.
- Describe situations under which water quality may be lowered from its current condition.
- Apply to human activities that are likely to have an impact on the water quality of surface water.
- Ensure that all human activities likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment (AKART).
- Apply three tiers of protection (described below) for surface waters of the state.

Tier I ensures existing and designated uses are maintained and protected and applies to all waters and all sources of pollutions. Tier II ensures that waters of a higher quality than the criteria assigned are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities. Tier III prevents the degradation of waters formally listed as "outstanding resource waters," and applies to all sources of pollution.

A facility must prepare a Tier II analysis when all three of the following conditions are met:

- The facility is planning a new or expanded action.
- Ecology regulates or authorizes the action.
- The action has the potential to cause measurable degradation to existing water quality at the edge of a chronic mixing zone.

Facility specific requirements— Ecology has determined that this facility must prepare a Tier II analysis. A Tier II analysis focuses on evaluating feasible alternatives that would eliminate or significantly reduce the level of degradation. The analysis also includes a review of the benefits and costs associated with alternative to lowering of water quality.

New discharges and facility expansions are prohibited from lowering water quality without providing overriding public benefits.

Ecology proposes to issue a new NPDES Permit for this facility which will authorize a new discharge. Therefore, the facility must comply with Tier II requirements of the anti-degradation policy. Under Tier II (WAC 173-201A-320), a new or expanded action is allowed if the action will not result in a "measurable change" in the quality of the receiving water, or if there is an overriding public interest that makes the action necessary.

After reviewing the facility's Interim Action Work Plan, Ecology has made a finding of overriding public interest. The basis for this finding includes the following: 1) data collected in detention basin 2 and along the WSDOT stormwater drain line in the south-central portion of the Site indicates concentrations exceeding Site Cleanup levels; 2) there is hydraulic continuity between groundwater and surface water, and contamination will eventually migrate to surface water if it is not contained or removed promptly; 3) there is a greater benefit to the environment if the Permittee addresses the contamination by employing AKART (all known, available, reasonable treatment technologies) to treat the contaminated soil and water (utilizing soil excavation and dual phase extraction system) before reaching surface water; 4) the treated water will meet surface water standards prior to discharge to Willow Creek. This decision is made as allowed under Chapter 173-201A-320.

The finding that the benefits of undertaking the pump/treat/discharge to surface water option exceed the costs, is based on the following facts:

- If Ecology does not issue a discharge permit to authorize the discharge of treated water (meeting surface water standards) resulting from the proposed cleanup activity, the contamination in the soil will reach groundwater and contaminate groundwater. Through hydraulic continuity, the contaminated groundwater will migrate into surface water; thus, polluting the receiving water body and causing surface water quality standards to be exceeded.
- If Ecology issues this discharge permit to authorize the discharge of treated water resulting from the proposed cleanup activity, the source of the contamination in the soil will be removed, which results in preventing or reducing the contamination from reaching groundwater. The contamination in groundwater will be contained and removed through the remediation pump and treat system, and reduce the transport of pollutants to reaching surface water. Thus, the groundwater quality will be improved and surface water quality will be better, than would be achieved if the cleanup option were not undertaken. The environmental net benefit is greater if the discharge permit is issued to allow the cleanup activity to proceed because the resulting treated water meet water quality standards.
- By undertaking this project, the property values and the recreational values are more likely to be enhanced than if the project were not to be undertaken.
- Social benefits related to recreational uses are likely to be accrued. This project will improve and promote a healthy environment and waterbody for the area and community.

Mixing zones

A mixing zone is the defined area in the receiving water surrounding the discharge port(s), where wastewater mixes with receiving water. Within mixing zones the pollutant concentrations may exceed water quality numeric standards, so long as the discharge doesn't interfere with designated uses of the receiving water body (for example, recreation, water supply, and aquatic life and wildlife habitat, etc.) The pollutant concentrations outside of the mixing zones must meet water quality numeric standards.

State and federal rules allow mixing zones because the concentrations and effects of most pollutants diminish rapidly after discharge, due to dilution. Ecology defines mixing zone sizes to limit the amount of time any exposure to the end-of-pipe discharge could harm water quality, plants, or fish.

The state's water quality standards allow Ecology to authorize mixing zones for the facility's permitted wastewater discharges only if those discharges already receive all known, available, and reasonable methods of prevention, control, and treatment (AKART). Mixing zones typically require compliance with water quality criteria within a specified distance from the point of discharge and must not use more than 25% of the available width of the water body for dilution [WAC 173-201A-400 (7)(a)(ii-iii)].

Ecology uses modeling to estimate the amount of mixing within the mixing zone. Through modeling Ecology determines the potential for violating the water quality standards at the edge of the mixing zone and derives any necessary effluent limits. Steady-state models are the most frequently used tools for conducting mixing zone analyses. Ecology chooses values for each effluent and for receiving water variables that correspond to the time period when the most critical condition is likely to occur (see Ecology's *Permit Writer's Manual*). Each critical condition parameter, by itself, has a low probability of occurrence and the resulting dilution factor is conservative. The term "reasonable worst-case" applies to these values.

There is no mixing zone granted in this permit for Former Unocal Edmonds Bulk Fuel Terminal's discharge.

D. Designated uses and surface water quality criteria

Applicable designated uses and surface water quality criteria are defined in Chapter 173-201A WAC. In addition, the U.S. EPA set human health criteria for toxic pollutants (EPA 1992). The tables included below summarize the criteria applicable to this facility's discharge. Due to the fact that Willow Creek is tidally influenced, and groundwater beneath the Lower Yard is hydraulically connected to Puget Sound (a marine water), which is not suitable for domestic water supply, Willow Creek is treated as a marine water body. Thus, marine aquatic life uses and associated criteria are presented below.

- Aquatic Life Uses are designated based on the presence of, or the intent to provide protection for the key uses. All indigenous fish and non-fish aquatic species must be protected in waters of the state in addition to the key species. The Aquatic Life Uses for this receiving water are identified below.

Table 4. Marine aquatic life uses and associated criteria

Excellent Quality	
Temperature Criteria – Highest 1Day MAX	16°C (60.8°F)
Dissolved Oxygen Criteria – Lowest 1 Day Minimum	6.0 mg/L
Turbidity Criteria	<ul style="list-style-type: none"> • 5 NTU over background when the background is 50 NTU or less; or • A 10 percent increase in turbidity when the background turbidity is more than 50 NTU
pH Criteria	pH must be within the range of 7.0 to 8.5 with a human-caused variation within the above range of less than 0.5 units.

- The *recreational uses* for this receiving water are identified below.

Table 5. Recreational uses and associated criteria

Recreational Use	Criteria
Primary Contact Recreation	Fecal coliform organism levels must not exceed a geometric mean value of 14 colonies/100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 43 colonies /100 mL.

- The miscellaneous marine water uses are wildlife habitat, harvesting, commerce and navigation, boating, and aesthetics.

E. Water quality impairments

Ecology has not documented any water quality impairments in the receiving water in the vicinity of the outfall.

F. Evaluation of surface water quality-based effluent limits for numeric criteria

Ecology has not authorized a mixing zone in the permit.

G. Human health

Washington’s water quality standards include 91 numeric human health-based criteria that Ecology must consider when writing NPDES permits. These criteria were established in 1992 by the U.S. EPA in its National Toxics Rule (40 CFR 131.36). The National Toxics Rule allows states to use mixing zones to evaluate whether discharges comply with human health criteria.

Ecology has determined the effluent contains chemicals of concern for human health, based on data or information indicating the discharge contains regulated chemicals. The effluent limits are listed in Section J of this fact sheet.

H. Sediment quality

The aquatic sediment standards (Chapter 173-204 WAC) protect aquatic biota and human health. Under these standards Ecology may require a facility to evaluate the potential for its discharge to cause a violation of sediment standards (WAC 173-204-400). Additional information about sediments can be obtained at the Aquatic Lands Cleanup Unit website. <http://www.ecy.wa.gov/programs/tcp/smu/sediment.html>

Through a review of the discharger characteristics and of the effluent characteristics, Ecology has determined that this discharge has no reasonable potential to violate the sediment management standards.

I. Groundwater quality limits

The groundwater quality standards (Chapter 173-200 WAC) protect beneficial uses of groundwater. Permits issued by Ecology must not allow violations of those standards (WAC 173-200-100).

The former Unocal Edmonds Bulk Fuels Terminal does not discharge wastewater to the ground. No permit limits are required to protect groundwater.

J. Effluent limits based on the Original and Amended Agreed Order No. 4460

The effluent limits proposed in this permit are consistent with those treatment/discharge limits listed in the Interim Action Work Plan as part of the Agreed Order No. 4460. Those limits are based on the most stringent of state and federal groundwater, surface water, and water quality standards. The limits and basis for these limits are listed in Table 6 below:

Table 6. Surface water cleanup levels

Parameter	Effluent Limits (µg/L)
TPH-G ¹	800 µg/L
TPH-D ¹	500 µg/L
Benzene ²	16 µg/L
Total cPAHs ^{2,3}	0.00013 µg/L ⁴

Notes:

- ¹ Method A (WAC 173-340-900, Table 720-1).
- ² National Recommended Ambient Water Quality Criteria (NRAWQC) for human-health (for consumption of organisms only as opposed to water + organisms) (USEPA 2002).
- ³ Total cPAHs is the sum of benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, benzo(a)pyrene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene concentrations that are adjusted using toxicity equivalency factors to represent a total benzo(a)pyrene concentration. The toxicity equivalency factors published in WAC 173-340-900, Table 708-2 are to be used for making the adjustments.
- ⁴ The daily maximum effluent limit for total cPAHs is 0.00013 µg/L. The quantitation level (QL) for PAHs is 0.05 µg/L, greater than the effluent limit, using the approved analytical test method EPA 625. Therefore, the QL will be used for assessment of compliance with the effluent limit. This QL will be referred to as enforcement limit in this permit.

The effluent limits above are surface-water cleanup levels (CULs) which represent the lowest of the Water Quality Standard (WQS) in WAC 173-201A-240, National Recommended Water Quality Criteria (NRAWQC), and NTR in 40 CFR 131.36. The most stringent CULs for benzene and cPAHs are the NRAWQC human health (organisms only). The NRAWQC human health (organisms only) for benzene (16 µg/L) is associated with a cancer risk of 2×10^{-6} , and the NRAWQC for cPAHs (0.00013 µg/L) is associated with a cancer risk of 6×10^{-7} (Amended Agreed Order 4460). Under the MTCA, standards are considered sufficiently protective if the cancer risk for those standards is less than 1×10^{-5} . Therefore, the NRAWQC for benzene and cPAHs are appropriate surface water CULs [WAC 173-340-730(5)(b)]. (ARCADIS 2015).

WQs and NRAWQC are not established for TPH mixtures. The MTCA regulations allow the use of Method A groundwater CULs (WAC 173-340-900, Table 720-1) to calculate surface water CULs for petroleum mixtures [WAC 173-340-730(3)(b)(iii)(C)]. (ARCADIS 2015). Thus, for the purpose of this permit, MTCA Method A CULs for TPH as presented in WAC 173-340-900, Table 720-I are used to establish effluent limits for TPH-diesel range organics, and TPH-gasoline range organics. This permit does not contain an effluent limit based on cleanup level for Heavy Oil. The CLUs for TPH-G and TPH-D are proposed below:

800 = Method A groundwater CUL for GRO ($\mu\text{g/L}$)

500 = Method A groundwater CUL for DRO and HO ($\mu\text{g/L}$)

K. Whole effluent toxicity

The water quality standards for surface waters forbid discharge of effluent that has the potential to cause toxic effects in the receiving waters. Many toxic pollutants cannot be measured by commonly available detection methods. However, laboratory tests can measure toxicity directly by exposing living organisms to the wastewater and measuring their responses. These tests measure the aggregate toxicity of the whole effluent, so this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Using the screening criteria in Chapter 173-205-040 WAC, Ecology determined that toxic effects caused by unidentified pollutants in the effluent are unlikely. Therefore, this permit does not require WET testing. Ecology may require WET testing in the future if it receives information indicating that toxicity may be present in this effluent.

IV. Monitoring Requirements

Ecology requires monitoring, recording, and reporting (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and that the discharge complies with the permit's effluent limits.

If a facility uses a contract laboratory to monitor wastewater, it must ensure that the laboratory uses the approved analytical methods which meet or exceed the method detection levels required by the permit. The permit describes when facilities may use alternative methods. It also describes what to do in certain situations when the laboratory encounters matrix effects. When a facility uses an alternative method as allowed by the permit, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

A. Wastewater monitoring

The monitoring schedule is detailed in the proposed permit under Special Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

V. Other Permit Conditions

A. Reporting and record keeping

Ecology based Special Condition S3 on its authority to specify any appropriate reporting and record keeping requirements to prevent and control waste discharges (WAC 173-220-210).

B. Operation and maintenance manual

Ecology requires industries to take all reasonable steps to properly operate and maintain their wastewater treatment system in accordance with state and federal regulations [40 CFR 122.41(e) and WAC 173-220-150 (1)(g)]. The facility will submit an updated operation and maintenance manual as required by state regulation for the construction of wastewater treatment facilities (WAC 173-240-150). Implementation of the procedures in the operation and maintenance manual would increase the facility's compliance with the terms and limits in the permit.

C. Stormwater pollution prevention plan requirements

In accordance with 40 CFR 122.44(k) and 40 CFR 122.44 (s), the permit includes requirements for the development and implementation of SWPPPs along with BMPs to minimize or prevent the discharge of pollutants to waters of the state. The BMPs in the proposed permit constitute:

- Best Practicable Control Technology Currently Available (BPT), (40 CFR §450.21).
- Best Conventional Pollutant Control Technology (BCT), (40 CFR §450.22).
- Best Available Technology Economically Achievable (BAT), 40 CFR §450.23). New Source Performance Standards representing the degree of effluent reduction attainable by application of the best available demonstrated control technology (NSPS), (40 CFR §450.24).

The objectives of the SWPPP are to:

1. Implement BMPs to prevent erosion and sedimentation, and to identify, reduce, eliminate, or prevent stormwater contamination and water pollution from construction activity.
2. Prevent violations of surface water quality, ground water quality, or sediment management standards.
3. Prevent adverse water quality impacts, including impacts to beneficial uses of the receiving water by controlling peak flow rates and volumes of stormwater runoff at the Permittee's outfalls and downstream of the outfalls during the construction phase of a project.

Condition S7 outlines specific requirements to prepare, implement, and modify the SWPPP. Permittees must prepare and fully implement the SWPPP, including narrative and drawings, in accordance with this permit. The SWPPP must address all phases of the construction project, beginning with initial soil disturbance until final site stabilization. All BMPs used or planned for a project (or specific phase of a project) must be clearly referenced in the SWPPP narrative and marked on the drawings.

D. General conditions

Ecology bases the standardized General Conditions on state and federal law and regulations. They are included in all individual industrial NPDES permits issued by Ecology.

VI. Permit Issuance Procedures

A. Permit modifications

Ecology may modify this permit to impose numerical limits, if necessary, to comply with water quality standards for surface waters, with sediment quality standards, or with water quality standards for groundwater, after obtaining new information from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

Ecology may also modify this permit to comply with new or amended state or federal regulations.

B. Proposed permit issuance

This proposed permit includes all statutory requirements for Ecology to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the state of Washington. Ecology proposes to issue this permit for a term of 5 years.

VII. References for Text and Appendices

Former Union Oil Company of California (Unocal) Edmonds Bulk Fuel Terminal

2015. National Pollutant Discharge Elimination System Waste Discharge Permit Application, EPA forms 1 and 2C.

2015. Public Review Draft Interim Action Work Plan for Former Unocal Edmonds Bulk Fuel Terminal Edmonds, WA.

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. *Water Quality Standards Handbook*. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. *Characterization of Stream Reaeration Capacity*. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

December 2011. *Permit Writer's Manual*. Publication Number 92-109
(<https://fortress.wa.gov/ecy/publications/SummaryPages/92109.html>)

Laws and Regulations (<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information (<http://www.ecy.wa.gov/programs/wq/permits/guidance.html>)

February 2007. *Focus Sheet on Solid Waste Control Plan, Developing a Solid Waste Control Plan for Industrial Wastewater Discharge Permittees*, Publication Number 07-10-024.
<http://www.ecy.wa.gov/pubs/0710024.pdf>

Wright, R.M., and A.J. McDonnell.

1979. *In-stream Deoxygenation Rate Prediction*. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

Appendix A--Public Involvement Information

Ecology proposes to issue a discharge permit to Chevron Environmental Management Company (Chevron) for the Former Unocal Edmonds Buk Fuel Terminal. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology placed a public notice of application on July 20, 2015, in the *Everett Herald* to inform the public about the submitted application and to invite comment on the reissuance of this permit.

Ecology placed a public notice of the draft permit on August 5, 2016, in the *Everett Herald* to inform the public and to invite comment on the proposed draft National Pollutant Discharge Elimination System permit and fact sheet.

The notice:

- Told where copies of the draft permit and fact sheet were available for public evaluation (a local public library, the closest Regional or Field Office, posted on our website).
- Offered to provide the documents in an alternate format to accommodate special needs.
- Urged people to submit their comments, in writing, before the end of the Comment Period.
- Told how to request a public hearing of comments about the proposed NPDES permit.
- Explained the next step(s) in the permitting process.

Ecology has published a document entitled *Frequently Asked Questions about Effective Public Commenting* which is available on our website at <https://fortress.wa.gov/ecy/publications/SummaryPages/0307023.html>.

You may obtain further information from Ecology by telephone at (425) 649-7201, or by writing to the address listed below.

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

The primary author of this permit and fact sheet is Jeanne Tran, P.E.

Appendix B--Your Right to Appeal

You have a right to appeal this permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of the final permit. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2) (see glossary).

To appeal you must do the following within 30 days of the date of receipt of this permit:

- File your appeal and a copy of this permit with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this permit on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

Appendix C--Glossary

- 1-DMax or 1-day maximum temperature** -- The highest water temperature reached on any given day. This measure can be obtained using calibrated maximum/minimum thermometers or continuous monitoring probes having sampling intervals of thirty minutes or less.
- 7-DADMax or 7-day average of the daily maximum temperatures** -- The arithmetic average of seven consecutive measures of daily maximum temperatures. The 7-DADMax for any individual day is calculated by averaging that day's daily maximum temperature with the daily maximum temperatures of the three days prior and the three days after that date.
- Acute toxicity** -- The lethal effect of a compound on an organism that occurs in a short time period, usually 48 to 96 hours.
- AKART** -- The acronym for "all known, available, and reasonable methods of prevention, control and treatment." AKART is a technology-based approach to limiting pollutants from wastewater discharges, which requires an engineering judgment and an economic judgment. AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and 520, WAC 173-200-030(2)(c)(ii), and WAC 173-216-110(1)(a).
- Alternate point of compliance** -- An alternative location in the groundwater from the point of compliance where compliance with the groundwater standards is measured. It may be established in the groundwater at locations some distance from the discharge source, up to, but not exceeding the property boundary and is determined on a site specific basis following an AKART analysis. An "early warning value" must be used when an alternate point is established. An alternate point of compliance must be determined and approved in accordance with WAC 173-200-060(2).
- Ambient water quality** -- The existing environmental condition of the water in a receiving water body.
- Ammonia** -- Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.
- Annual average design flow (AADF)** -- The average of the daily flow volumes anticipated to occur over a calendar year.
- Average monthly (intermittent) discharge limit** -- The average of the measured values obtained over a calendar month's time taking into account zero discharge days.
- Average monthly discharge limit** -- The average of the measured values obtained over a calendar month's time.
- Background water quality** -- The concentrations of chemical, physical, biological or radiological constituents or other characteristics in or of groundwater at a particular point in time upgradient of an activity that has not been affected by that activity, [WAC 173-200-020(3)]. Background water quality for any parameter is statistically defined as the 95% upper tolerance interval with a 95% confidence based on at least eight hydraulically upgradient water quality samples. The eight samples are collected over a period of at least one year, with no more than one sample collected during any month in a single calendar year.
- Best management practices (BMPs)** -- Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and

practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD5 -- Determining the five-day Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD5 is used in modeling to measure the reduction of dissolved oxygen in receiving waters after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD₅ is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass -- The intentional diversion of waste streams from any portion of a treatment facility.

Categorical pretreatment standards -- National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties, which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

Chlorine -- A chemical used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic toxicity -- The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean water act (CWA) -- The federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance inspection-without sampling -- A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance inspection-with sampling -- A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations. In addition it includes as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Ecology may conduct additional sampling.

Composite sample -- A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction activity -- Clearing, grading, excavation, and any other activity, which disturbs the surface of the land. Such activities may include road building; construction of residential houses, office buildings, or industrial buildings; and demolition activity.

Continuous monitoring -- Uninterrupted, unless otherwise noted in the permit.

- Critical condition** -- The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.
- Date of receipt** -- This is defined in RCW 43.21B.001(2) as five business days after the date of mailing; or the date of actual receipt, when the actual receipt date can be proven by a preponderance of the evidence. The recipient's sworn affidavit or declaration indicating the date of receipt, which is unchallenged by the agency, constitutes sufficient evidence of actual receipt. The date of actual receipt, however, may not exceed forty-five days from the date of mailing.
- Detection limit** -- The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the pollutant concentration is above zero and is determined from analysis of a sample in a given matrix containing the pollutant.
- Dilution factor (DF)** -- A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction, for example, a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.
- Distribution uniformity** -- The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.
- Early warning value** -- The concentration of a pollutant set in accordance with WAC 173-200-070 that is a percentage of an enforcement limit. It may be established in the effluent, groundwater, surface water, the vadose zone or within the treatment process. This value acts as a trigger to detect and respond to increasing contaminant concentrations prior to the degradation of a beneficial use.
- Enforcement limit** -- The concentration assigned to a contaminant in the groundwater at the point of compliance for the purpose of regulation, [WAC 173-200-020(11)]. This limit assures that a groundwater criterion will not be exceeded and that background water quality will be protected.
- Engineering report** -- A document that thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report must contain the appropriate information required in WAC 173-240-060 or 173-240-130.
- Fecal coliform bacteria** -- Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.
- Grab sample** -- A single sample or measurement taken at a specific time or over as short a period of time as is feasible.
- Groundwater** -- Water in a saturated zone or stratum beneath the surface of land or below a surface water body.
- Industrial user** -- A discharger of wastewater to the sanitary sewer that is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial wastewater -- Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business; from the development of any natural resource; or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Local limits -- Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

Major facility -- A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum daily discharge limit -- The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Maximum day design flow (MDDF) -- The largest volume of flow anticipated to occur during a one-day period, expressed as a daily average.

Maximum month design flow (MMDF) -- The largest volume of flow anticipated to occur during a continuous 30-day period, expressed as a daily average.

Maximum week design flow (MWDF) -- The largest volume of flow anticipated to occur during a continuous 7-day period, expressed as a daily average.

Method detection level (MDL) -- See Method Detection Level.

Minor facility -- A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing zone -- An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The permit specifies the area of the authorized mixing zone that Ecology defines following procedures outlined in state regulations (Chapter 173-201A WAC).

National pollutant discharge elimination system (NPDES) -- The NPDES (Section 402 of the Clean Water Act) is the federal wastewater permitting system for discharges to navigable

waters of the United States. Many states, including the state of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both state and federal laws.

pH -- The pH of a liquid measures its acidity or alkalinity. It is the negative logarithm of the hydrogen ion concentration. A pH of 7 is defined as neutral and large variations above or below this value are considered harmful to most aquatic life.

Pass-through -- A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

Peak hour design flow (PHDF) -- The largest volume of flow anticipated to occur during a one-hour period, expressed as a daily or hourly average.

Peak instantaneous design flow (PIDF) -- The maximum anticipated instantaneous flow.

Point of compliance -- The location in the groundwater where the enforcement limit must not be exceeded and a facility must comply with the Ground Water Quality Standards. Ecology determines this limit on a site-specific basis. Ecology locates the point of compliance in the groundwater as near and directly downgradient from the pollutant source as technically, hydrogeologically, and geographically feasible, unless it approves an alternative point of compliance.

Potential significant industrial user (PSIU) -- A potential significant industrial user is defined as an Industrial User that does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day; or
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

Ecology may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation level (QL) -- Also known as Minimum Level of Quantitation (ML) -- The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to $(1, 2, \text{ or } 5) \times 10^n$, where n is an integer (64 FR 30417).

ALSO GIVEN AS:

The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency, December 2007).

Reasonable potential -- A reasonable potential to cause a water quality violation, or loss of sensitive and/or important habitat.

Responsible corporate officer -- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Significant industrial user (SIU) --

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; and
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement [in accordance with 40 CFR 403.8(f)(6)].

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

Slug discharge -- Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the POTW. This may include any pollutant released at a flow rate that may cause interference or pass through with the POTW or in any way violate the permit conditions or the POTW's regulations and local limits.

Solid waste -- All putrescible and non-putrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

Soluble BOD₅ -- Determining the soluble fraction of Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of soluble organic material present in an effluent that is utilized by bacteria. Although the soluble BOD₅ test is not specifically described in Standard Methods, filtering the raw sample through at least a 1.2 um filter prior to running the standard BOD₅ test is sufficient to remove the particulate organic fraction.

State waters -- Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater -- That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based effluent limit -- A permit limit based on the ability of a treatment method to reduce the pollutant.

Total coliform bacteria -- A microbiological test, which detects and enumerates the total coliform group of bacteria in water samples.

Total dissolved solids -- That portion of total solids in water or wastewater that passes through a specific filter.

Total maximum daily load (TMDL) -- A determination of the amount of pollutant that a water body can receive and still meet water quality standards.

Total suspended solids (TSS) -- Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset -- An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water quality-based effluent limit -- A limit imposed on the concentration of an effluent parameter to prevent the concentration of that parameter from exceeding its water quality criterion after discharge into receiving waters.

Appendix D--Site Maps

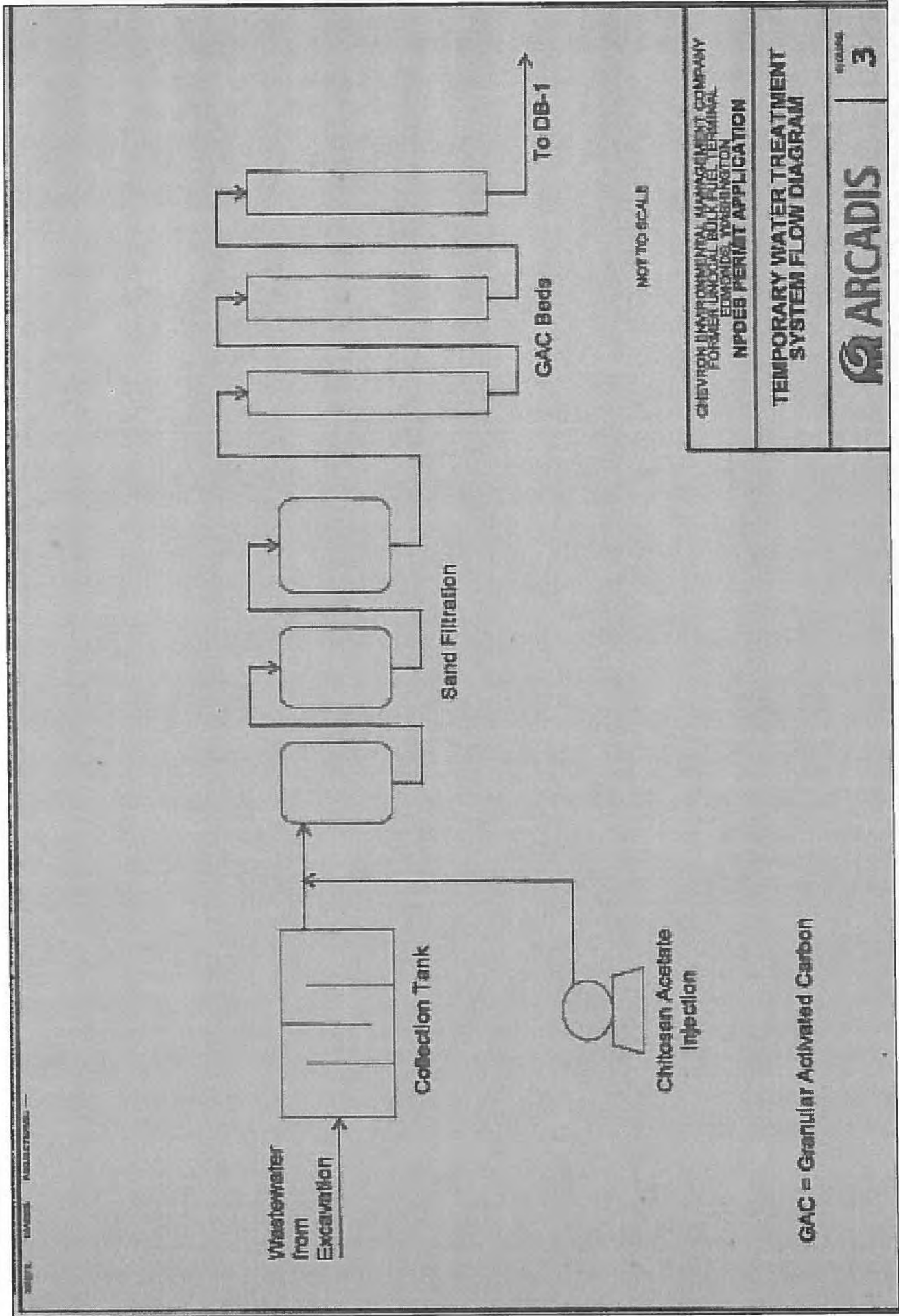


Figure 3. NPDES engineering report process flow diagram

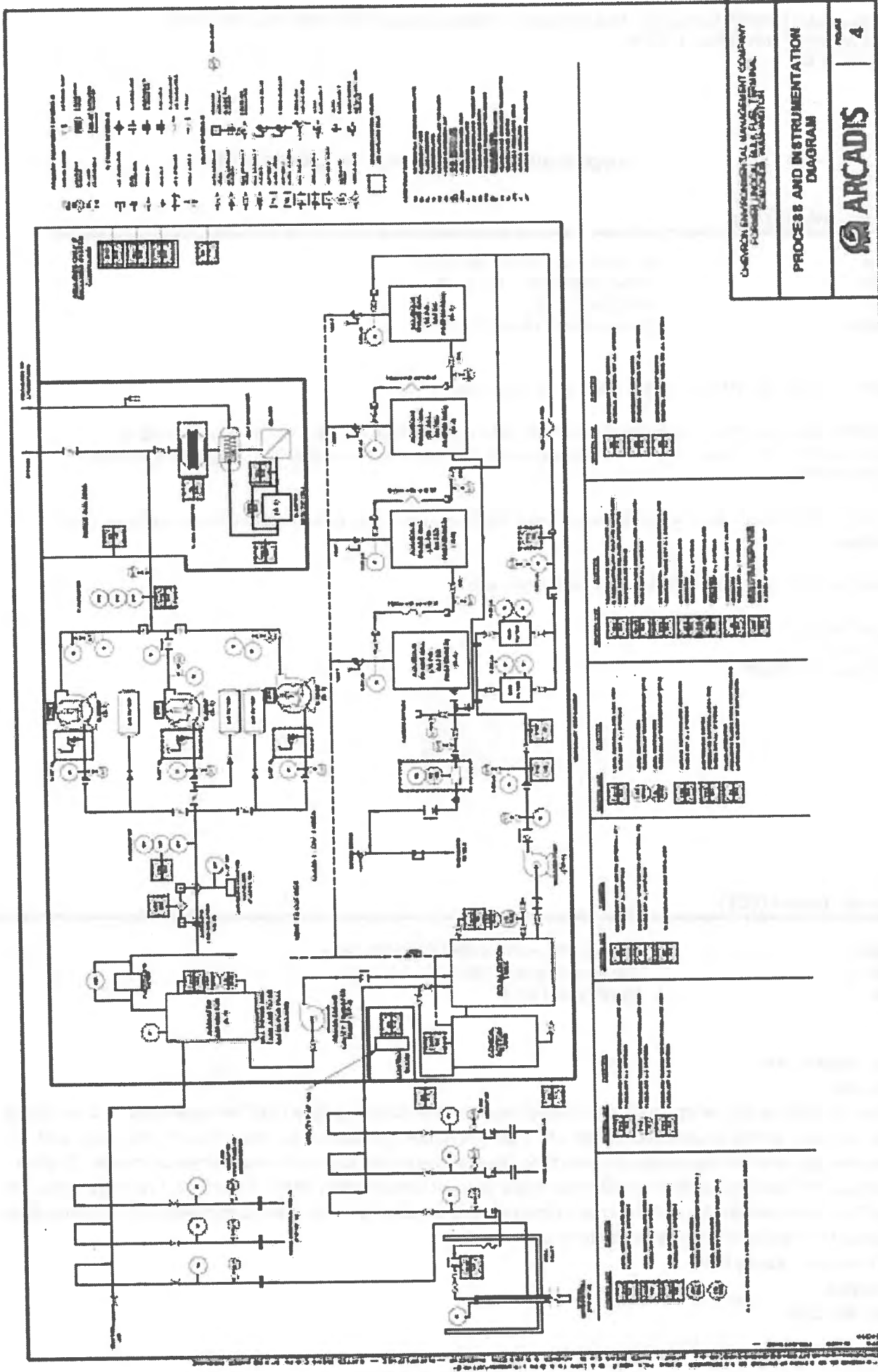


Figure 4. Process and instrumentation diagram

Appendix E--Response to Comments

South, David (ECY)

From: Marjorie Fields <mvfields@me.com>
Sent: Sunday, August 07, 2016 5:22 PM
To: South, David (ECY)
Subject: Edmonds Unocal Cleanup Site

Progress in clean up at the Edmonds Unocal site is good news.

However, pumping petroleum-contaminated water into Willow Creek and then into the Sound could be dangerous for water quality, even after water treatment. Please be certain all possible safeguards are in place for this process.

Similarly, the contaminated soil extraction process requires extreme care to keep dangerous contaminants from escaping.

Thank you for your efforts to make this cleanup successful.

Marjorie Fields
327 2nd Ave N.
Edmonds, WA 98020

South, David (ECY)

From: Dawna Lahti <edmondite1@hotmail.com>
Sent: Tuesday, August 23, 2016 11:18 AM
To: South, David (ECY)

Mr. David South

Dear Sir:

I am availing myself of the privilege of weighing in on the Edmonds Bulk Fuel Terminal 0178 cleanup during the comment period ending September 6th. I am a resident of Edmonds for more than 30 years and am increasingly aware of the successful efforts to clean and preserve the remaining Edmonds marsh. To allow cleanup pollutants to leach in would undo many years of conservation effort. Therefore, I strongly agree with the Draft Amendment Agreed Order to abate benzene products prior to release and with NPDES which would uphold the highest standards available to us.

Thank you. Kindly RSVP.

Sincerely

Mrs. Jim Lahti

South, David (ECY)

From: dmm98020@comcast.net
Sent: Tuesday, August 09, 2016 9:24 AM
To: South, David (ECY)
Subject: Unocal Edmonds Cleanup Site

David South
Toxic Cleanup Program Site Manager

As an Edmonds resident, my comment is appreciation to the Dept. of Ecology for their follow-up to protect the water quality, require polluting entities to be responsible for cleanup.

With the major federal, state and local funds proposed to daylight Willow Creek, the water quality is of particular importance to returning fish, salmon, among them. We are most fortunate that this area of the Edmonds Marsh was not filled and developed and each of these steps to protect the natural environment have such significant and long term consequences.

Thank you,

Dianna Maish
Edmonds

South, David (ECY)

From: Tran, Jeanne (ECY)
Sent: Wednesday, September 21, 2016 8:07 AM
To: South, David (ECY)
Subject: FW: Comments on National Pollutant Discharge Elimination System Waste Discharge Permit No. WA0991007

From: joe scordino [mailto:joe.scordino@yahoo.com]
Sent: Tuesday, September 06, 2016 4:24 PM
To: Tran, Jeanne (ECY) <JTRA461@ECY.WA.GOV>
Subject: Comments on National Pollutant Discharge Elimination System Waste Discharge Permit No. WA0991007

To: Jeanne Tran, Dept. of Ecology.

The following are my comments on the Draft National Pollutant Discharge Elimination System (NPDES) Permit application from the Chevron Environmental Management Company for the Unocal Edmonds Bulk Fuel Terminal Site to address contaminated soil and groundwater.

The permit should clarify that discharges into Willow Creek will ultimately discharge into the Edmonds Marsh AND/OR Puget Sound dependent on tide levels. During periods of higher tides (greater than about six to seven feet), Willow Creek DOES NOT flow into Puget Sound; the creek either backs up into the Edmonds Marsh (when tide gate is functioning in fall/winter months) or is mixed with incoming saltwater from Puget Sound and flows into the Edmonds Marsh (when tide gate is secured open in spring/summer months). Thus, UnoCal cleanup discharges into Willow Creek do affect the Edmonds Marsh and discharged contaminants may deposit in the sediments in the Edmonds Marsh. The Edmonds Marsh has likely been contaminated by groundwater infusion and runoff from past UnoCal operations and additional contaminant discharges, even if at low levels, may increase the contaminant load in the sediments in the Edmonds Marsh.

The tide gate downstream of the UnoCal property is secured open by the City of Edmonds between about March 15 and October 15 of each year to allow tidal influx into the Edmonds Marsh. In the late fall/winter months (mid-October to mid-March), the tidegate is returned to functioning to prevent saltwater from entering the Edmonds Marsh due to winter flooding concerns. This tide gate and tidal height will affect the flow of discharges of treated/contaminated water from the UnoCal site.

The permit should take into account potential adverse affects to the Edmonds Marsh due to flow conditions. One approach would be to restrict discharges to only those periods when the tide is below six feet to ensure that discharges will be flowing into Puget Sound and not settling into the sediments in the Edmonds Marsh.

I would also recommend that the permit require some sort of independent monitoring. Self-monitoring, although more cost efficient, does not provide the level of certainty that the public expects in clean-up of petroleum-compound contaminated areas. There are negative repercussions of oil industry self-monitoring as evidenced by the Deepwater Horizon situation in the Gulf, and they can only be addressed through independent monitoring. The permittee should pay the costs of such monitoring, but there should be no contractual arrangements or otherwise between the permittee and the independent monitors. Public funded agencies also should not have to pay for the monitoring. The permit could require that the Dept. of Ecology would contract for independent monitoring and then bill the permittee for the contractor and administrative costs (so there is no expenditure of public funds for the monitoring).

The reporting requirements in the permit appear adequate, but it is not clear that the reports will be made easily accessible for the public (without having to go through

public disclosure procedures). I don't know if it needs to be a permit condition, but there needs to be a mechanism for the public to access all reports and data through an internet portal or something. One approach is for Ecology to set-up a publicly accessible site and have a permit condition requiring the permittee to post all reports and data to such site. The City of Edmonds had a citizen group (the ECAC) that oversaw previous UnoCal cleanup operations and although the group has disbanded, there are still a number of Edmonds citizens who are interested in overseeing and tracking the clean-up operation. Many of us are disappointed that potential impacts of the UnoCal operations on the Edmonds Marsh and the need for sediment sampling in the Marsh have been dismissed by Department of Ecology and we want to track cleanup operations to ensure the Edmonds Marsh is not further impacted even by low contaminant levels.

Lastly, section G.2 of the permit pertains to site entry and inspection. Would it be possible for Department of Ecology to designate the 'Edmonds Stream Team' as an authorized representative to access the site for the purpose of collecting water quality measurements and water samples in Willow Creek and the ditch along the UnoCal property? The 'Edmonds Stream Team' is a citizen science project, recognized by the City of Edmonds, that collects water quality data in three Edmonds streams and the Edmonds Marsh with high school students. I can provide more details on the 'Edmonds Stream Team' and work out details if Ecology would be willing to help authorize access to the UnoCal property for monitoring waters along the southern edge of the Marsh/Willow Creek.

Sincerely,

Joe Scordino

South, David (ECY)

From: Sharon Sneddon <sksneddon@frontier.com>
Sent: Monday, August 22, 2016 11:44 AM
To: South, David (ECY)
Subject: Unocal Edmonds Cleanup Site

I concur that the Interim Action Work Plan should proceed as amended. Increasing the cleanup levels for benzo(a)pyrene and benzene will contribute to a more healthy environment once the cleanup is finally finished.

Sharon Sneddon
Edmonds

South, David (ECY)

From: Tran, Jeanne (ECY)
Sent: Wednesday, September 21, 2016 8:07 AM
To: South, David (ECY)
Subject: FW: Unocal Edmonds Cleanup Site

-----Original Message-----

From: Sharon Sneddon [mailto:sksneddon@frontier.com]
Sent: Monday, August 22, 2016 11:55 AM
To: Tran, Jeanne (ECY) <JTRA461@ECY.WA.GOV>
Subject: Unocal Edmonds Cleanup Site

The National Pollutant Discharge Elimination System Permit should not be granted to Chevron Environmental Management. Washington State Water Pollution Control regulations and the Federal Clean Water Act may not be strict enough to keep some of the latent chemicals remaining in the treated wastewater from disrupting optimal stream chemistry that allows aquatic creatures to flourish. The treated wastewater should not be allowed to flow into Willow Creek.

Sharon Sneddon
Edmonds

From: South, David (ECY)
Sent: Tuesday, September 27, 2016 9:53 AM
To: Sharon Sneddon <sksneddon@frontier.com>; Dawna Lahti <edmondite1@hotmail.com>; joe.scordino@yahoo.com; dmm98020@comcast.net; Marjorie Fields <mvfields@me.com>
Cc: Jolitz, Kim S <kjolitz@chevron.com>; Boortz, Marielle (MJBoortz) <MJBoortz@chevron.com>; Zorn, Scott <Scott.Zorn@arcadis.com>; Tran, Jeanne (ECY) <JTRA461@ECY.WA.GOV>; Lui, Nancy (ECY) <nlui461@ECY.WA.GOV>; Svoboda, Patrick <SvobodP@wsdot.wa.gov>
Subject: Unocal Edmonds cleanup site - response to comments

This email responds to comments received during the August 2016 public comment period on cleanup of contamination at the Unocal Edmonds Bulk Fuel Terminal Site. The comment period was on making cleanup levels for benzo(a)pyrene and benzene more strict and on the Draft National Pollution Discharge Elimination System (NPDES) Permit for the Site. The NPDES Permit requires treatment of contaminated water produced during cleanup to a quality protective of human health and the environment prior to discharge to Willow Creek.

Comments were received via email from five people. These emails, which are public record documents, are in the attached file **Compiled_Comments.pdf**. Ecology considered each comment. No changes were made to the Amendment to the Consent Decree setting stricter cleanup levels or to the NPDES Permit as a result of the comments. Specific points are addressed below.

Several commenters expressed agreement with setting stricter cleanup levels for benzo(a)pyrene and benzene. The lower concentrations are a result of changes made to the federal National Recommended Water Quality Criteria for the protection of human health.

One commenter said the NPDES Permit should not be issued to Chevron Environmental Management Company (Chevron). The commenter indicated treated wastewater should not be allowed to flow into Willow Creek because state and federal standards may not be strict enough to protect aquatic life. As mentioned above, the stricter standards are based on protection of human health. This is based on people eating fish (or other aquatic organisms). There are no federal or state standards for the protection of aquatic life for the chemicals of interest at this Site. Testing performed as part of investigations at the Site indicate the concentrations protective of human health will be protective of aquatic life.

One commenter expressed concern that cleanup of contaminated soil be done with extreme care to keep contaminants from escaping. Cleanup is done using strict health and safety protocols to keep contaminants from re-entering the environments. Dust control measures are employed (e.g., fugitive dust will be controlled with water spray from an on-site water tank), truckloads of excavated soil are covered, and truck wheels are washed prior to leaving the Site. Two dust monitors will be installed during work hours, one upwind of the work area and one downwind of the work area.

Willow Creek is a tidally-influenced stream, and at high tides greater than six feet water flows from Puget Sound up Willow Creek into Edmonds Marsh. One commenter indicated that the permit should clarify that discharges into Willow Creek will ultimately discharge into the Edmonds Marsh or Puget Sound, depending on the tide levels. This commenter suggested that discharges be restricted to periods when the tide level is below six feet to ensure that discharges flow into Puget Sound and not Willow Creek. Discharge limits in the NPDES permit are protective of both Puget Sound and Edmonds Marsh.

One commenter recommended that the NPDES Permit require independent monitoring by a contractor independent of Chevron, but paid by Chevron. The Washington State Department of Ecology is the regulatory agency charged with overseeing the discharge monitoring required by the NPDES Permit. Self-monitoring by the Permittee is the basic approach used by the NPDES Permit system nationwide. The permit contains language (Section S3 of the permit) that requires that the contract laboratory be accredited by Ecology's Manchester Laboratory in order to perform the analysis. The contract laboratory reports must include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter. The permittee is required to monitor and report in accordance with the conditions set forth in the permit. Falsification of information submitted to Ecology is a violation of the terms and conditions of the permit. If Ecology identifies issues regarding the monitoring, Ecology will take appropriate measures, including sampling the discharge, as necessary.

One commenter asked about the public availability of the monitoring results. Monitoring results will be available on Ecology's Permitting and Reporting Information System (PARIS) web site. A member of the public can click on Access PARIS and enter the permit number (WA0991007) to obtain the data. No information will be available until the discharge actually starts.

One commenter asked if it would be possible for Ecology to designate the Edmonds Stream Team as an authorized representative to access the site. Ecology authorized representatives are under contract to Ecology, are working at the direction of Ecology, and must have legally-required health and safety training for working on hazardous waste sites. It would not be possible for Ecology to authorize the Edmonds Stream Team to access the Site.

APPENDIX D

Well Abandonment Logs



RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No.

AE44619

Construction/Decommission

Construction

Decommission ORIGINAL INSTALLATION Notice of Intent Number _____

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

Property Owner Chevron

Site Address 11720 Unoco Road

City Edmonds County Snohomish

Unique Ecology Well ID Tag No. _____

Location 1/4 NW 1/4 NE Sec 26 TWN 27N R 3E or EWM WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Lat/Long (s,t,r still Required) Lat Deg n/a Lat Min/Sec n/a Long Deg n/a Long Min/Sec n/a

Materials used and the information reported above are true to my best knowledge and belief

Tax Parcel No. 27032600102400

Driller Trainee Name (Print) Kyle Ceruti

Driller/Trainee Signature _____

Cased or Uncased Diameter 2" Static Level 4'

Driller/Trainee License No. 3200

Work/Decommission Start Date 8-19-17

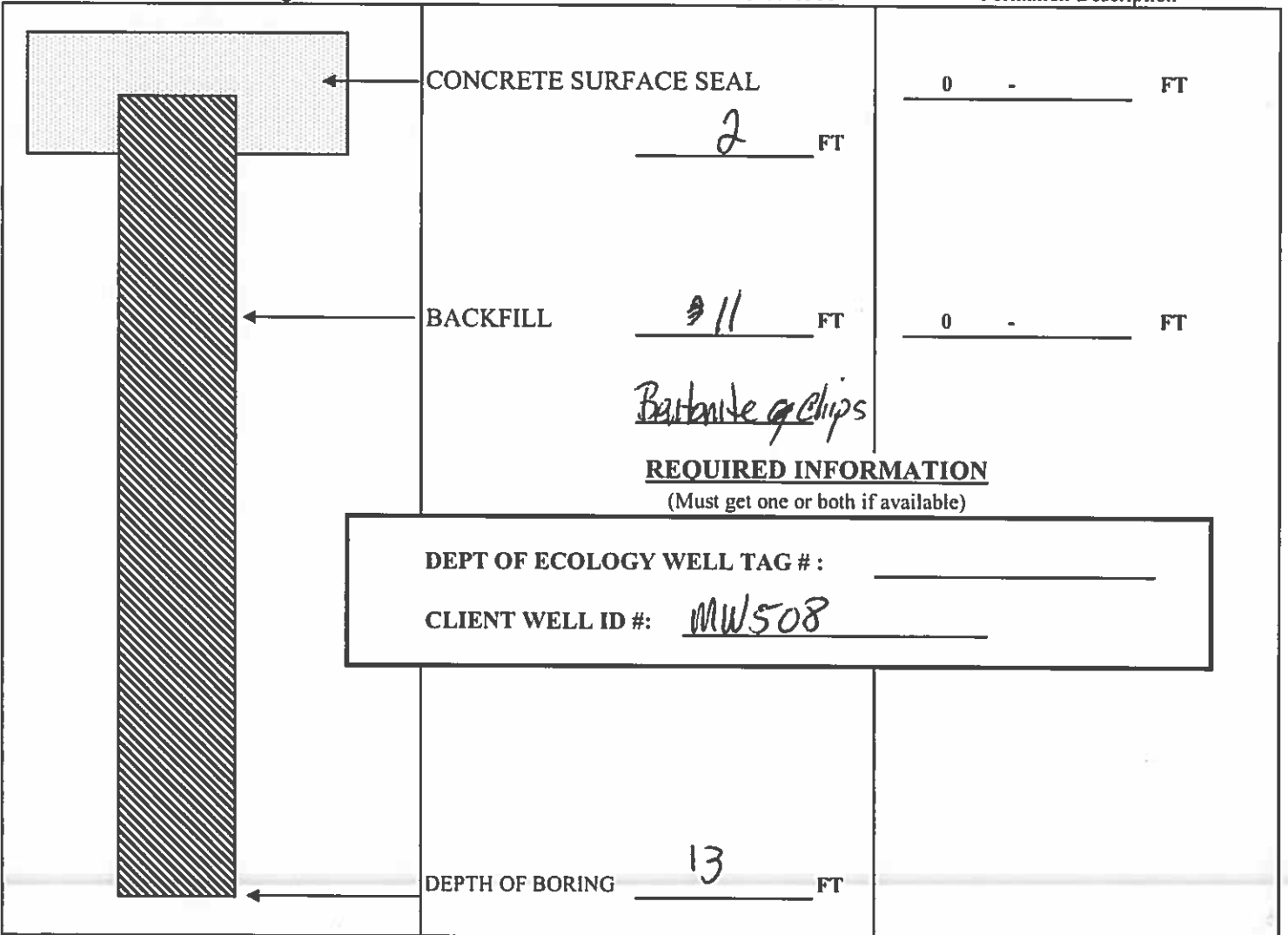
If trainee, licensed drillers' Signature and License No. _____

Work/Decommission Completed Date 8-19-17

Construction/Design

Well Data 103-17-1381

Formation Description



RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No.

AE44619

Construction/Decommission

Construction

Decommission *ORIGINAL INSTALLATION* Notice
of Intent Number _____

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

Property Owner Chevron

Site Address 11720 Unoco Road

City Edmonds County Snohomish

EWM

Unique Ecology Well ID
Tag No. _____

Location 1/4 NW 1/4 NE Sec 26 TWN 27N R 3E or
WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Lat/Long (s,l,r Lat Deg n/a Lat Min/Sec n/a
still Required) Long Deg n/a Long Min/Sec n/a

Materials used and the information reported above are true to my best knowledge and belief

Tax Parcel No. 27032600102400

Driller Trainee Name (Print) Kyle Cerutti

Driller/Trainee Signature _____

Cased or Uncased Diameter 2" Static Level 4'

Driller/Trainee License No. 3200

Work/Decommission Start Date 8-19-17

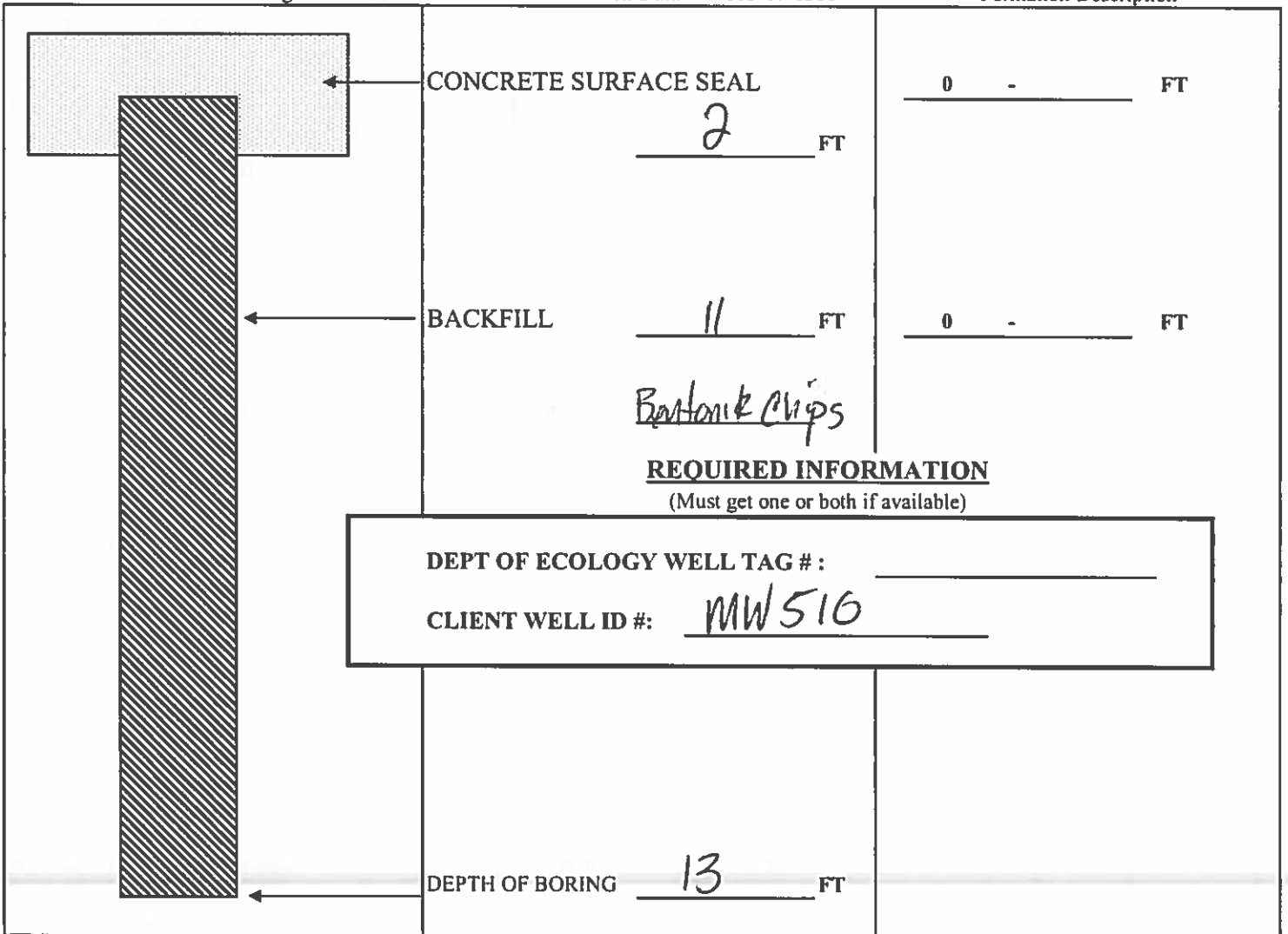
If trainee, licensed drillers'
Signature and License No. _____

Work/Decommission Completed Date 8-19-17

Construction/Design

Well Data 103-17-1381

Formation Description



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(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No.

AE44619

Construction/Decommission

Construction

Decommission ORIGINAL INSTALLATION Notice
of Intent Number _____

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

Property Owner Chevron

Site Address 11720 Unoco Road

City Edmonds County Snohomish

EWM

Unique Ecology Well ID
Tag No. _____

Location 1/4 NW 1/4 NE Sec 26 TWN 27N R 3E or
WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Lat/Long (s,t,r Lat Deg n/a Lat Min/Sec n/a
still Required) Long Deg n/a Long Min/Sec n/a

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Tax Parcel No. 27032600102400

Driller Trainee Name (Print) Kyle Ceruti

Driller/Trainee Signature _____

Cased or Uncased Diameter 1" Static Level 4'

Driller/Trainee License No. 3200

Work/Decommission Start Date 8-19-17

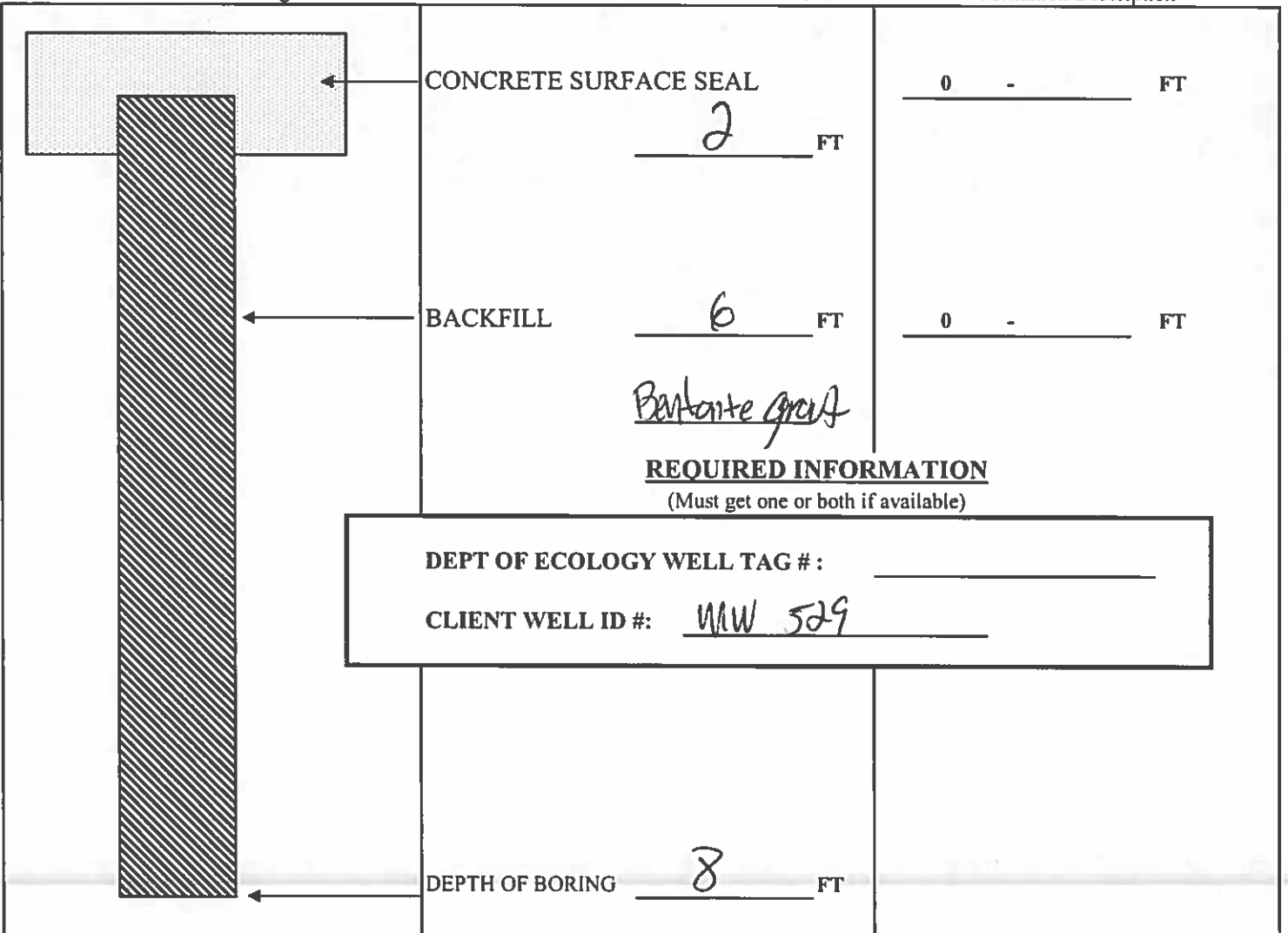
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Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

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City Edmonds County Snohomish

EWM

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WWM

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Driller Trainee Name (Print) Kyle Ceruti

Cased or Uncased Diameter 1" Static Level 4'

Driller/Trainee Signature _____

Driller/Trainee License No. 3200

Work/Decommission Start Date 8-19-17

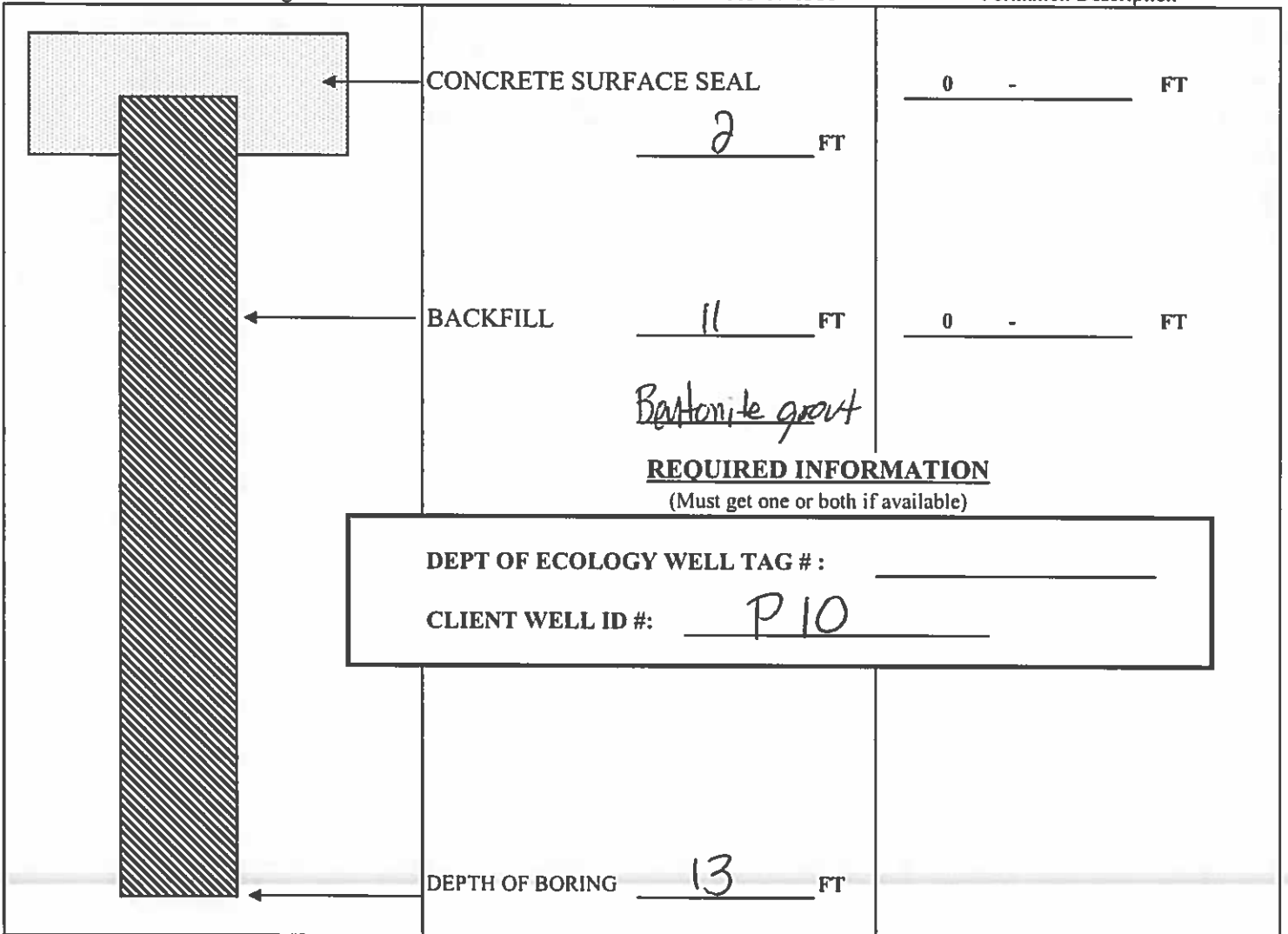
If trainee, licensed drillers' Signature and License No. _____

Work/Decommission Completed Date 8-19-17

Construction/Design

Well Data 103-17-1381

Formation Description



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(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. _____

AE44619

Construction/Decommission

Construction

Decommission ORIGINAL INSTALLATION Notice
of Intent Number _____

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

Property Owner Chevron

Site Address 11720 Unoco Road

City Edmonds County Snohomish

Unique Ecology Well ID
Tag No. _____

Location 1/4 NW 1/4 NE Sec 26 TWN 27N R 3E or
WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for
construction of this well, and its compliance with all Washington well construction standards

Lat/Long (s,t,r still Required) Lat Deg n/a Lat Min/Sec n/a
Long Deg n/a Long Min/Sec n/a

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Tax Parcel No. 27032600102400

Driller Trainee Name (Print) Kyle Ceruti

Driller/Trainee Signature _____

Cased or Uncased Diameter 1" Static Level 4'

Driller/Trainee License No. 3200

Work/Decommission Start Date 8-19-17

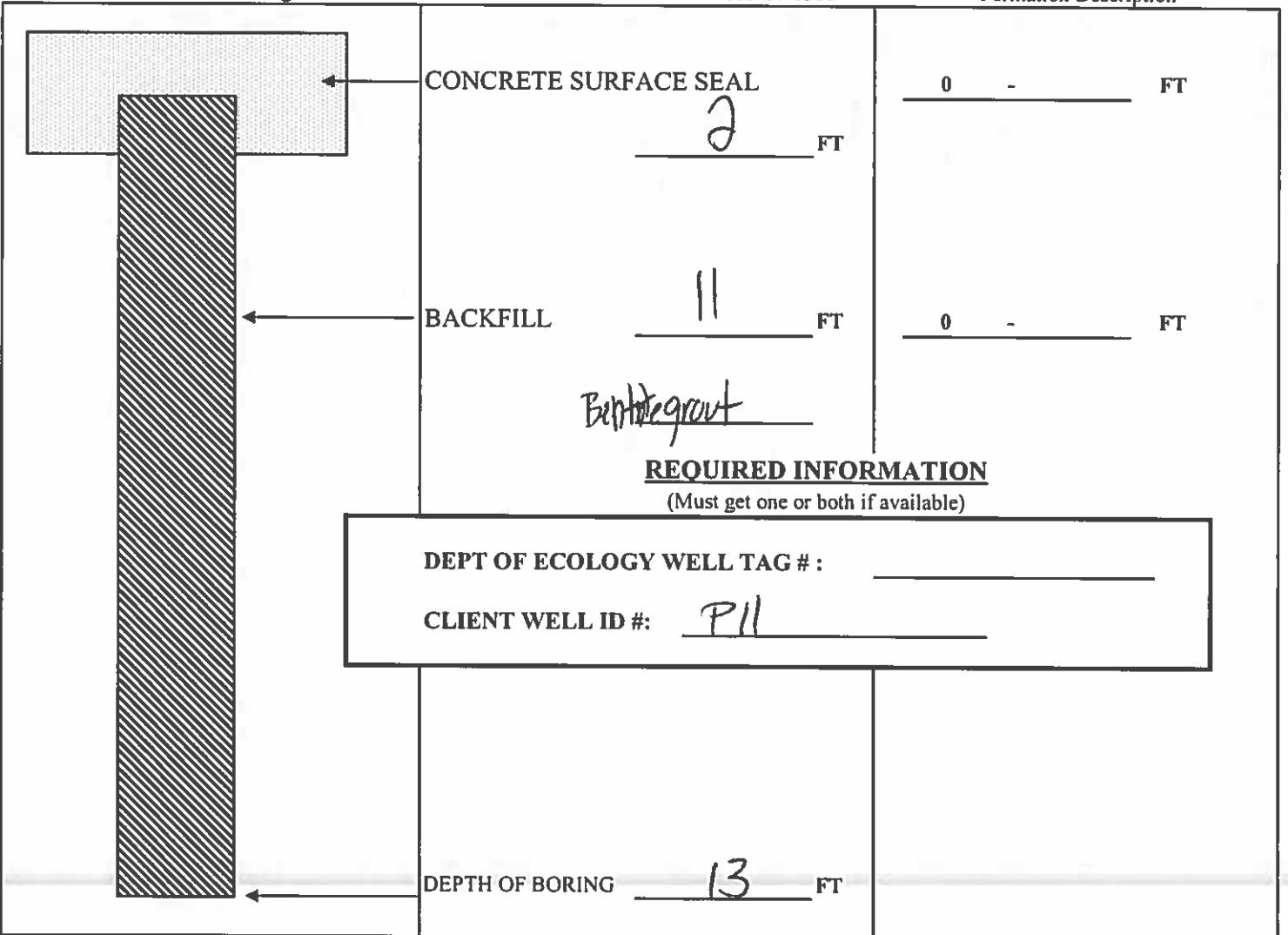
If trainee, licensed drillers'
Signature and License No. _____

Work/Decommission Completed Date 8-19-17

Construction/Design

Well Data 103-17-1381

Formation Description



Scale 1" = _____

Page _____ of _____

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

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AE44619

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Construction

Decommission ORIGINAL INSTALLATION Notice
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Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

Property Owner Chevron

Site Address 11720 Unoco Road

City Edmonds County Snohomish

EWM

Unique Ecology Well ID _____

Tag No. _____

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WWM

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still Required) Long Deg n/a Long Min/Sec n/a

Materials used and the information reported above are true to my best knowledge and belief

Tax Parcel No. 27032600102400

Driller Trainee Name (Print) Kyle Ceruti

Driller/Trainee Signature _____

Cased or Uncased Diameter 1" Static Level 4'

Driller/Trainee License No. 3200

Work/Decommission Start Date 8-19-17

If trainee, licensed drillers' _____

Signature and License No. _____

Work/Decommission Completed Date 8-19-17

Construction/Design

Well Data 103-17-1381

Formation Description

	CONCRETE SURFACE SEAL <u>2</u> FT	<u>0 -</u> FT
	BACKFILL <u>11</u> FT <i>Bentonite grout</i>	<u>0 -</u> FT
	DEPTH OF BORING <u>13</u> FT	

REQUIRED INFORMATION

(Must get one or both if available)

DEPT OF ECOLOGY WELL TAG #: _____

CLIENT WELL ID #: PI2

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No.

AE44619

Construction/Decommission

Construction

Decommission ORIGINAL INSTALLATION Notice
of Intent Number _____

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

Property Owner Chevron
Site Address 11720 Unoco Road
City Edmonds County Snohomish

Unique Ecology Well ID _____
Tag No. _____

Location 1/4 NW 1/4 NE Sec 26 TWN 27N R 3E or _____
WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Lat/Long (s,t,r still Required) Lat Deg n/a Lat Min/Sec n/a
Long Deg n/a Long Min/Sec n/a

Materials used and the information reported above are true to my best knowledge and belief

Driller Trainee Name (Print) Kyle Ceruti
Driller/Trainee Signature _____
Driller/Trainee License No. 3200

Tax Parcel No. 27032600102400
Cased or Uncased Diameter 1" Static Level 4'
Work/Decommission Start Date 8-19-17

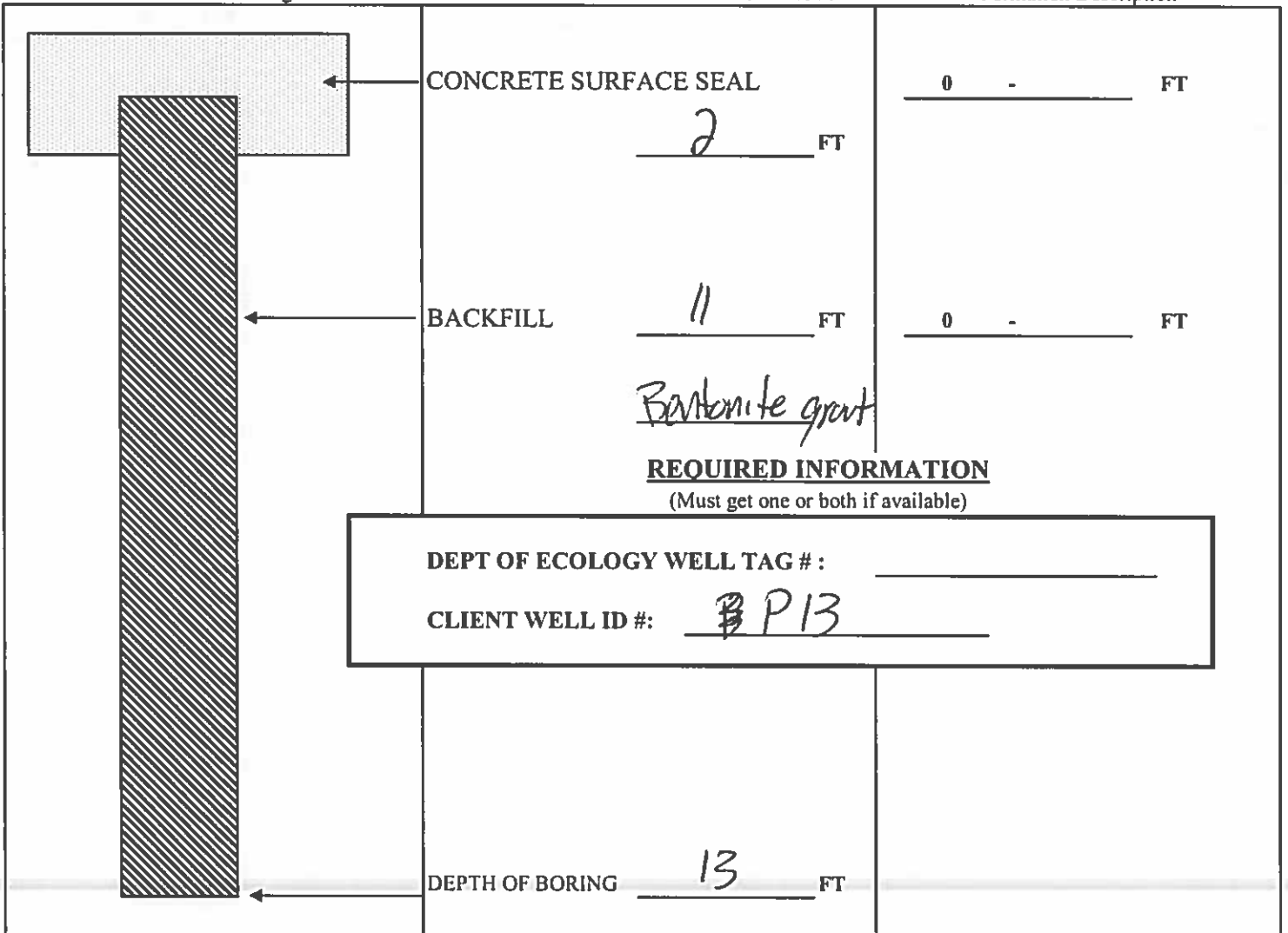
If trainee, licensed drillers' Signature and License No. _____

Work/Decommission Completed Date 8-19-17

Construction/Design

Well Data 103-17-1381

Formation Description



RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. _____

AE44619

Construction/Decommission

Construction

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Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

Property Owner Chevron

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EWM

Unique Ecology Well ID

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still Required) Long Deg n/a Long Min/Sec n/a

Materials used and the information reported above are true to my best knowledge and belief

Tax Parcel No. 27032600102400

Driller Trainee Name (Print) Kyle Ceruti

Cased or Uncased Diameter 1" Static Level 4'

Driller/Trainee Signature _____

Work/Decommission Start Date 8-19-17

Driller/Trainee License No. 3200

Work/Decommission Completed Date 8-19-17

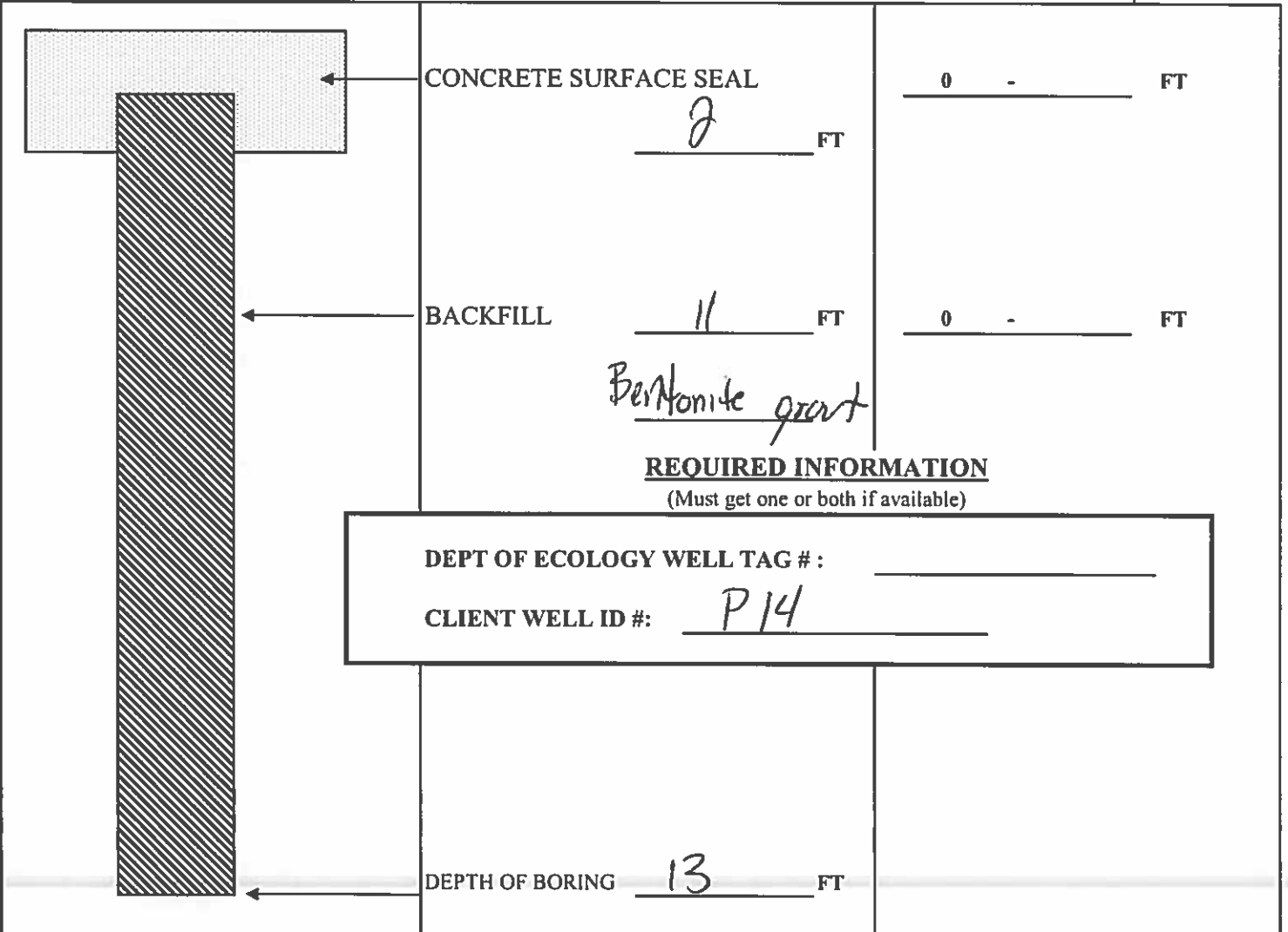
If trainee, licensed drillers' _____

Signature and License No. _____

Construction/Design

Well Data 103-17-1381

Formation Description



REQUIRED INFORMATION

(Must get one or both if available)

DEPT OF ECOLOGY WELL TAG #: _____

CLIENT WELL ID #: P14

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No.

AE44619

Construction/Decommission

Construction

Decommission ORIGINAL INSTALLATION Notice
of Intent Number _____

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

Property Owner Chevron

Site Address 11720 Unoco Road

City Edmonds County Snohomish

EWM

Unique Ecology Well ID
Tag No. _____

Location 1/4 NW 1/4 NE Sec 26 TWN 27N R 3E or
WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for
construction of this well, and its compliance with all Washington well construction standards

Lat/Long (s,t,r still Required) Lat Deg n/a Lat Min/Sec n/a
Long Deg n/a Long Min/Sec n/a

Materials used and the information reported above are true to my best knowledge and belief

Tax Parcel No. 27032600102400

Driller Trainee Name (Print) Kyle Ceruti

Driller/Trainee Signature _____

Cased or Uncased Diameter 1" Static Level 4'

Driller/Trainee License No. 3200

Work/Decommission Start Date 8-19-17

If trainee, licensed drillers' _____

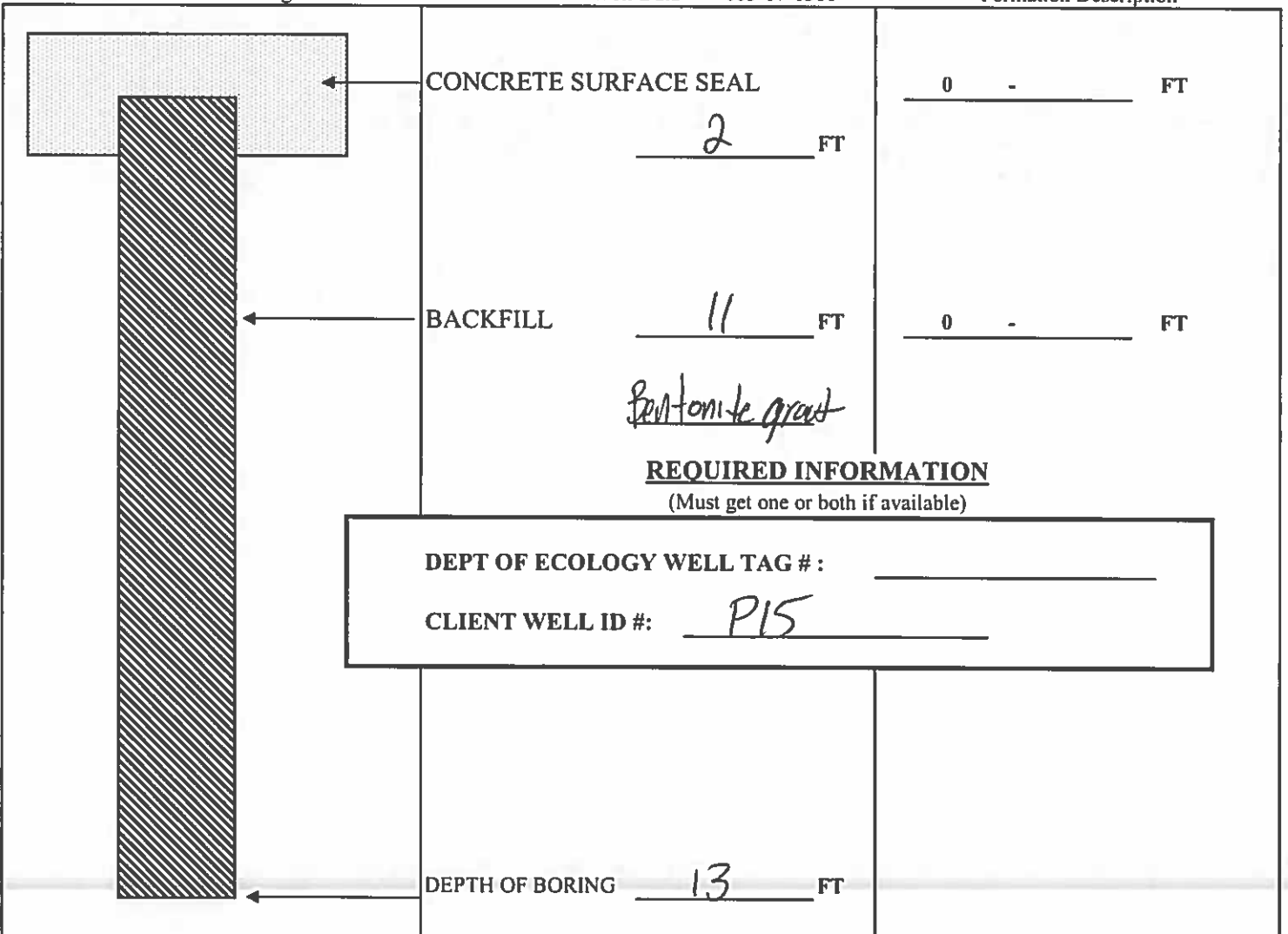
Work/Decommission Completed Date 8-19-17

Signature and License No. _____

Construction/Design

Well Data 103-17-1381

Formation Description



REQUIRED INFORMATION

(Must get one or both if available)

DEPT OF ECOLOGY WELL TAG #: _____

CLIENT WELL ID #: P15

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. _____

AE44619

Construction/Decommission

Construction

Decommission ORIGINAL INSTALLATION Notice
of Intent Number _____

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm Arcadis

Property Owner Chevron

Site Address 11720 Unoco Road

City Edmonds County Snohomish

EWM

Unique Ecology Well ID

Tag No. _____

Location 1/4 NW 1/4 NE Sec 26 TWN 27N R 3E or
WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Lat/Long (s,t,r Lat Deg n/a Lat Min/Sec n/a

still Required) Long Deg n/a Long Min/Sec n/a

Materials used and the information reported above are true to my best knowledge and belief

Driller Trainee Name (Print) Kyle Ceruti

Tax Parcel No. 27032600102400

Driller/Trainee Signature _____

Cased or Uncased Diameter 1" Static Level 4'

Driller/Trainee License No. 3200

Work/Decommission Start Date 8-19-17

If trainee, licensed drillers' _____

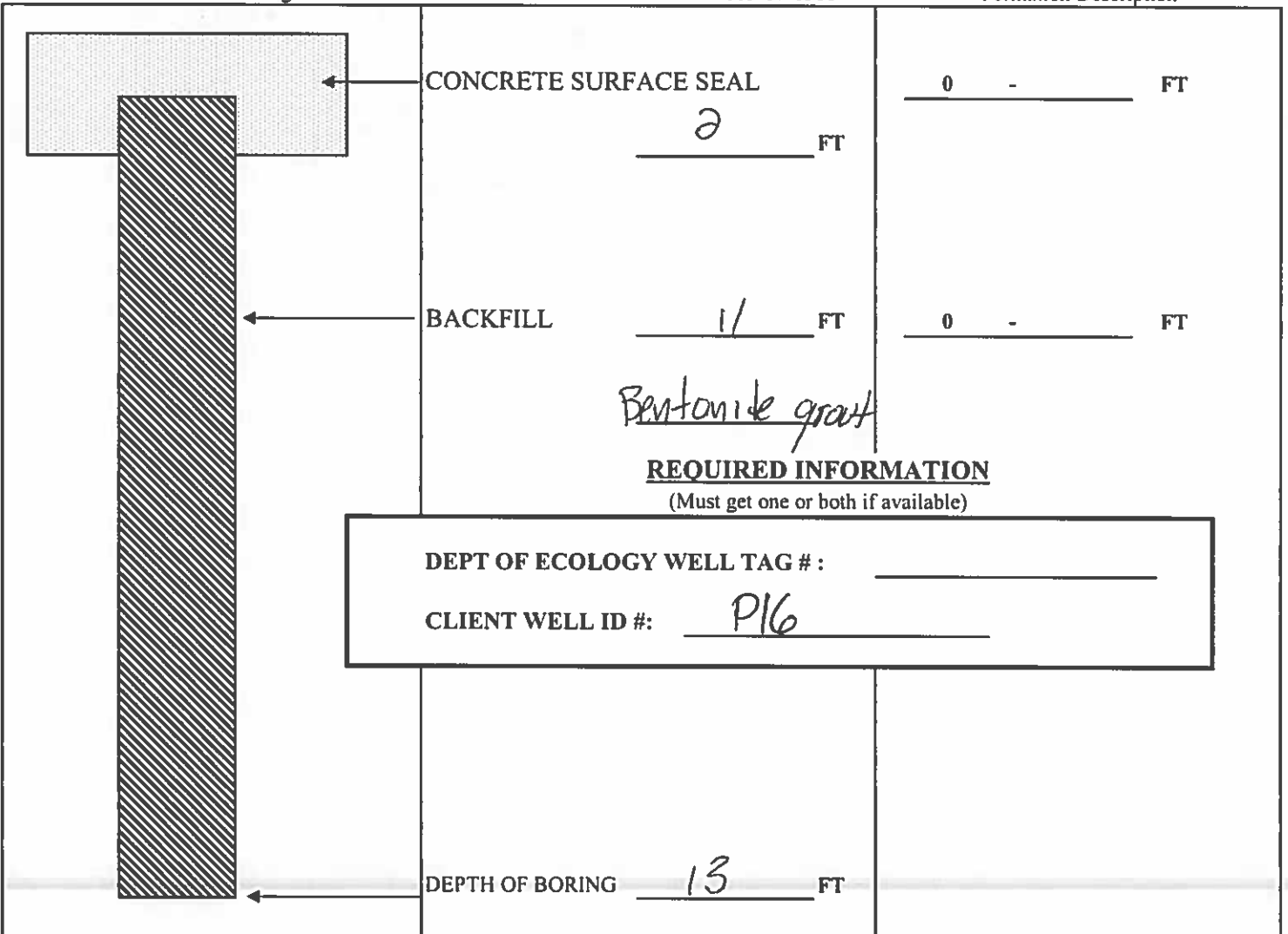
Work/Decommission Completed Date 8-19-17

Signature and License No. _____

Construction/Design

Well Data 103-17-1381

Formation Description



RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. _____

AE45521

Construction/Decommission

Construction

Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

MW-E

Type of Well

Resource Protection

Geotechnical Soil Boring

Consulting Firm _____

Arcadis

Property Owner _____

Chevron

Site Address _____

11720 Unoco Road

City _____

Edmonds

County _____

Snohomish

Unique Ecology Well ID _____

Tag No. _____

Location _____

1/4 NW 1/4 NE Sec 26 TWN 27N R 3E or _____
WWM

WELL CONSTRUCTION CERTIFICATION I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Lat/Long (s,t,r

Lat Deg _____

Lat Min/Sec _____

Lat _____

n/a

still Required) Long Deg _____

Long Min/Sec _____

Long _____

n/a

n/a

Materials used and the information reported above are true to my best knowledge and belief

Tax Parcel No. _____

27032600102400

Driller Trainee Name (Print) _____

Quits Askew

Driller/Trainee Signature _____

Driller/Trainee License No. _____

2867

Cased or Uncased Diameter _____

12 1/4" OD

8 1/4" ID

Static Level _____

7

Work/Decommission Start Date _____

10/20/17

Work/Decommission Completed Date _____

10/20/17

If trainee, licensed drillers' _____

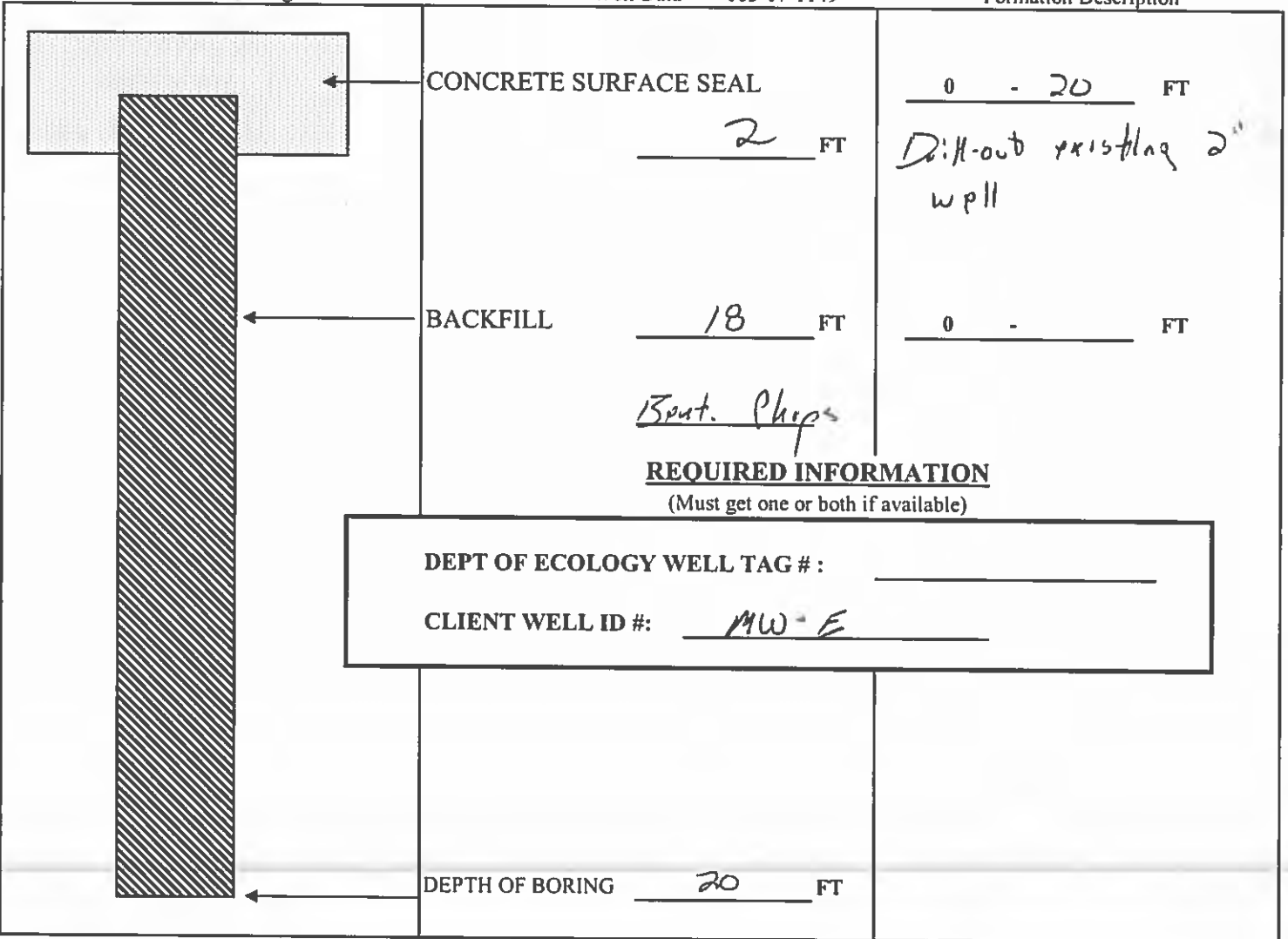
Signature and License No. _____

Construction/Design

Well Data

103-17-1149

Formation Description



2 FT

CONCRETE SURFACE SEAL

0 - 20 FT

Dill-out existing 2" well

BACKFILL

18 FT

0 - FT

Bent. Phos

REQUIRED INFORMATION

(Must get one or both if available)

DEPT OF ECOLOGY WELL TAG #: _____

CLIENT WELL ID #: MW-E

DEPTH OF BORING 20 FT

APPENDIX E

Monitoring Wells Boring logs



Date Start-Finish: 10/20/17-10/20/17	Northing : NA	Well/Boring ID: MW-533
Drilling Company: Cascade Drilling	Easting: NA	Client: Chevron EMC
Driller's Name: Curtis Askew	Casing Elevation: NA	Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Drilling Method: Hollow-stem Auger	Borehole Depth: 13.0 ft. bgs.	Weather Conditions: 50° F, Rain
Auger Size: 8 1/4"	Surface Elevation: NA	
Rig Type: NA	Descriptions By: Eric Krueger	
Sampling Method: None		

DEPTH (ft.)	Sample Run Number	Sample/Int/Type	Recovery (%)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0											
1											
2											
3										MW-533 installed in 2017 Detention Basin 2 (DB-2) Excavation backfill. Backfill consists of 8111 vadose fill and 8129 saturated fill.	
4											
5											
6	NA	NA	NA	NA	NA	NA	NA	NA			
7											
8											
9											
10											
11											
12											
13										Total depth 13.0 ft. bgs.	



REMARKS: ft= Feet " = Inch ° F= Degrees Fahrenheit
 bgs = Below ground surface
 NA = Not Applicable/Available
 PID = Photoionization detector
 ppm= Parts Per Million
 PVC= Polyvinyl Chloride

Date Start-Finish: 10/20/17-10/20/17	Northing : NA	Well/Boring ID: MW-534
Drilling Company: Cascade Drilling	Easting: NA	Client: Chevron EMC
Driller's Name: Curtis Askew	Casing Elevation: NA	Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Drilling Method: Hollow-stem Auger	Borehole Depth: 13.0 ft. bgs.	Weather Conditions: 50° F, Rain
Auger Size: 8 1/4"	Surface Elevation: NA	
Rig Type: NA	Descriptions By: Eric Krueger	
Sampling Method: None		

DEPTH (ft.)	Sample Run Number	Sample/Int/Type	Recovery (%)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0											
1											
2											
3										MW-534 installed in 2017 Detention Basin 2 (DB-2) Excavation backfill. Backfill consists of 8111 vadose fill and 8129 saturated fill.	
4											
5											
6	NA	NA	NA	NA	NA	NA	NA	NA			
7											
8											
9											
10											
11											
12											
13										Total depth 13.0 ft. bgs.	

	REMARKS: ft= Feet " = Inch °F= Degrees Fahrenheit
	bgs = Below ground surface NA = Not Applicable/Available PID = Photoionization detector ppm= Parts Per Million PVC= Polyvinyl Chloride

Date Start-Finish: 10/20/17-10/20/17	Northing : NA	Well/Boring ID: MW-535
Drilling Company: Cascade Drilling	Easting: NA	Client: Chevron EMC
Driller's Name: Curtis Askew	Casing Elevation: NA	Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Drilling Method: Hollow-stem Auger	Borehole Depth: 13.0 ft. bgs.	Weather Conditions: 50° F, Rain
Auger Size: 8 1/4"	Surface Elevation: NA	
Rig Type: NA	Descriptions By: Eric Krueger	
Sampling Method: None		

DEPTH (ft.)	Sample Run Number	Sample/Int/Type	Recovery (%)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0											
1											
2											
3											
4											
5											
6	NA	NA	NA	NA	NA	NA	NA	NA			
7											
8											
9											
10											
11											
12											
13										Total depth 13.0 ft. bgs.	

REMARKS: ft= Feet " = Inch ° F= Degrees Fahrenheit
 bgs = Below ground surface
 NA = Not Applicable/Available
 PID = Photoionization detector
 ppm= Parts Per Million
 PVC= Polyvinyl Chloride



Date Start-Finish: 10/20/17-10/20/17	Northing : NA	Well/Boring ID: MW-E-R
Drilling Company: Cascade Drilling	Easting: NA	Client: Chevron EMC
Driller's Name: Curtis Askew	Casing Elevation: NA	Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Drilling Method: Hollow-stem Auger	Borehole Depth: 20.0 ft. bgs.	Weather Conditions: 50° F, Rain
Auger Size: 12 1/4"	Surface Elevation: NA	
Rig Type: NA	Descriptions By: Eric Krueger	
Sampling Method: None		

DEPTH (ft.)	Sample Run Number	Sample/Int/Type	Recovery (%)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
10	NA	NA	NA	NA	NA	NA	NA	NA			
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

MW-E-R installed in the same location as the over drill of MW-E. Soil cuttings from the over drill of MW-E consisted of SAND, poorly graded, medium grained and gray.

Total Depth of MW-E-R 13.0 ft. bgs.

MW-E was overdrilled to 20 ft. bgs.

REMARKS: ft= Feet " = Inch ° F= Degrees Fahrenheit
 bgs = Below ground surface
 NA = Not Applicable/Available
 PID = Photoionization detector
 ppm= Parts Per Million
 PVC= Polyvinyl Chloride



APPENDIX F

Photographs Logs



PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington

DETENTION BASIN 2 EXCAVATION ACTIVITIES



Photograph: 1

Description:

A temporary water treatment (TWT) system was installed to treat groundwater that will accumulate in the excavation prior to remediation work.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/22/2017

Photographs:

2 A & B

Description:

Surface water areas, Detention Basin 1 (DB-1) on photograph A and Willow Creek on photograph B, were isolated from the excavation area prior to remediation work.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date A: 8/30/2017

Date B: 8/28/2017



PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington



Photographs:
3 A, B & C

Description:

Excavation was implemented from August 31st to October 2nd, 2017. Groundwater accumulated in the excavation.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:
Arcadis U.S., Inc.

Date A: 8/31/2017

Date B: 9/19/2017

Date C: 9/28/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington



Photograph: 4

Description:

Once all performance soil samples were collected, and analytical data were confirmed to be in compliance with established Site remediation and cleanup levels, the excavation was backfilled with clean backfill imported onsite.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 10/4/2017



Photograph: 5

Description:

DB-1 banks after
restoration completion.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

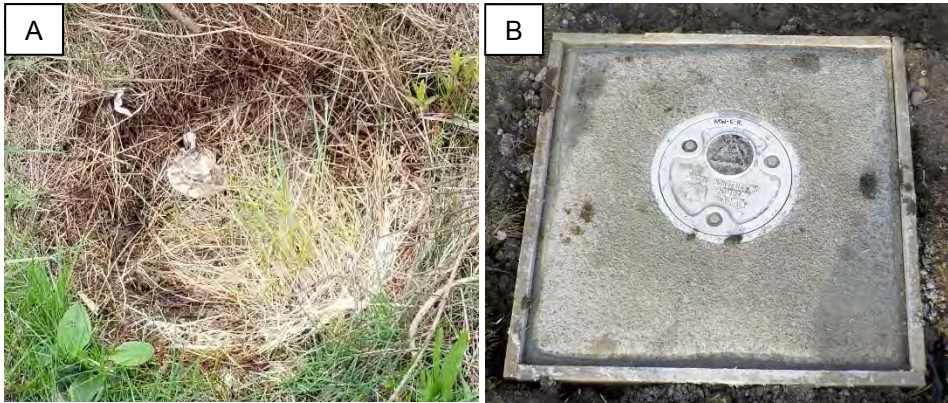
Photograph taken by:

Arcadis U.S., Inc.

Date: 10/19/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington



Photograph: 6 A & B

Description:

Damaged monitoring well MW-E on photograph A prior to over-drilling and re-installation of MW-E-R on photograph B.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date A: 10/20/2017

Date B: 10/23/2017



Photograph: 7

Description:

Site after restoration completion. New compliance monitoring wells were installed to replace the compliance monitoring wells decommissioned prior to excavation activities.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 10/23/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington

WILLOW CREEK ISOLATION



Photograph: 1

Description:

Prior to constructing temporary cofferdams, the creek was seined to push fish out of the work area and block nets were installed to keep fish out.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/23/2017



Photograph: 2

Description:

Turbidity curtains were then placed just inside the block nets.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/24/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington



Photograph: 3

Description:

24-inch diameter high-density polyethylene pipes were brought in small sections at the site and then welded until forming two bypass pipes of approximately 250 feet each.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/23/2017



Photograph: 4

Description:

The two bypass pipes were placed in the creek channel to allow water to move upstream and downstream of the isolation area.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/25/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington



Photograph: 5

Description:

At each of the extremity of the two bypass pipes, a geomembrane was laid down in the streambed.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/25/2017



Photograph: 6

Description:

The two bypass pipes were then covered by a geomembrane and held in place by bulk bags which formed the basis of the temporary cofferdams.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/25/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington



Photograph: 7

Description:

After the pipes and bulk bags were in place, plastic sheeting was used to create the cofferdams.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/28/2017



Photograph: 8

Description:

Rocks and gravel were used to fill any gaps and seal off the isolation area between the two cofferdams.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/28/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington



Photograph: 9

Description:

From 09/01/17 to 09/25/17, two temporary cofferdams were isolating Willow Creek along the DB-2 remediation area with bypass pipes allowing water to move upstream and downstream of the isolated area.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 9/25/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington

FISH RELOCATION



Photograph: 10

Description:

Block nets were installed at both ends of the isolation area inside the cofferdams.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/29/2017



Photograph: 11 (A & B)

Description:

Arcadis scientists made multiple passes with a haul seine of both sides of the Willow Creek channel to push any remaining fish in the isolation area into the block nets at either end of the reach where they were collected

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/29/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington



Photograph: 12 (A & B)

Description:

Collected fish were counted, speciated and released just upstream or downstream of the dams and outside the isolation area.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 8/29/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington

WILLOW CREEK RESTORATION



Photograph: 13

Description:

The temporary cofferdams were removed after completion of DB-2 excavation activities near Willow Creek.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:
Arcadis U.S., Inc.

Date: 9/25/2017



Photograph: 14

Description:

Willow Creek banks were then restored.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:
Arcadis U.S., Inc.

Date: 9/29/2017

PHOTOGRAPH LOG

Chevron Environmental Management Company
Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington



Photograph: 15

Description:

Willow Creek banks
after restoration
completion.

Location:

Former Unocal
Edmonds Bulk Fuel
Terminal

Photograph taken by:

Arcadis U.S., Inc.

Date: 10/13/2017