

MEMORANDUM
DEPARTMENT OF ECOLOGY
NORTHWEST REGIONAL OFFICE

Date: July 14, 2003
To: Interested Public
From: David L. South
Subject: Unocal Edmonds Terminal – Response to comments on draft interim action report, *Work Plan for Detention Basin No. 1 and Southwest Lower Yard, Unocal Edmonds Terminal*, dated April 22, 2003

Unocal Corporation plans to perform additional cleanup actions at the Unocal Edmonds Bulk Fuel Terminal in 2003. The planned cleanup actions are described in the draft interim action report, *Work Plan for Detention Basin No. 1 and Southwest Lower Yard, Unocal Edmonds Terminal*, dated April 22, 2003. This work plan was issued for public comment from May 1 through 30, 2003.

Comments were received from members of the general public, the Edmonds Citizen's Awareness Committee (ECAC), and the Port of Edmonds. These comments and the Washington State Department of Ecology's (Ecology's) responses are attached.

Written Comments from the General Public

Joan Dewhurst
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Why is this process taking so long? Field work in 1994/6 – and only developing a plan of action in 2002/3. Following with a 2 year public comment period. This is absolutely ridiculous length of time. This valuable land has been being unusable for over 10 years. Something is very wrong [with] DOE's [Ecology's] process and procedures – It is little wonder that DOE has lost credibility with the public.

Response: Ecology understands the length of time necessary to address a significant cleanup site is often daunting. The various factors which influence cleanup schedules include the need to develop technically sound approaches to defining the nature and extent of contamination and to decide how to address the contamination in a public process. Ecology works towards a consensus view among all interested parties. This takes time, and is not always successful. Another significant factor is limited resources and the need for Ecology to prioritize its efforts.

Ecology notes that the public comment periods are not two years in length, but generally 30 days. At present Unocal is preparing a Feasibility Study report which will assess different ways in which the site might be cleaned up. These alternatives will be the subject of a 30-day public comment period. Following that comment period, Ecology will prepare a draft Cleanup Action Plan, which will also be the subject of a 30-day public comment period. During development of both the Feasibility Study and the draft Cleanup Action Plan, Unocal, Ecology, the Edmonds Citizen's Awareness Committee, the City of Edmonds, and the Port of Edmonds will be meeting regularly to discuss each of their concerns and how they would like to see those concerns addressed.

**Questions Raised at the
Edmonds Citizen's Awareness Committee
Public Meeting on Lower Yard Interim Actions
May 14, 2003**

What about the piping to the dock?

Response: The piping to the dock became the responsibility of the City of Edmonds when the City purchased the Marina Beach property in December 2000.

Where does the contaminated soil go?

Response: The petroleum-contaminated soil will be transported off site to a soil treatment facility. The facility will heat the soil to extract the petroleum from the soil and the petroleum will then be burned. The resulting clean soil will be re-used. Metals-contaminated soil will be sent to a landfill permitted to accept such waste. The final selection of facilities will be done during the bid process for the work.

Concern for Marsh and Detention Basin 1:

-Will there be backfill of soil into Detention Basin 1?

Response: Soil will not be backfilled into Detention Basin No. 1.

-What is the future use of Detention Basin 1?

Response: Detention Basin No. 1 will continue to be used for storm water detention.

-The marsh should be protected. One individual mentioned seeing a sheen in the marsh—oil?

Response: Neither Ecology nor Unocal has observed a sheen in the marsh. If a sheen is observed, the time and date of observation, place the sheen was observed from, and location of the sheen within the marsh should be reported to Ecology (contact David L. South at 425-649-7200 or dsou461@ecy.wa.gov).

Will the berms in the Upper Yard come out?

Response: Unocal is in the process of selling the Upper Yard portion of the site to Triad Development. Triad will be grading the property. Property development, including grading of the property in preparation for construction, is being handled under the normal City of Edmonds development processes and is not part of the cleanup actions being overseen by Ecology. Contact Steve Bullock of the City of Edmonds (425-771-0220) for information on development plans.

What is the soonest projection for the Upper Yard certification and development? Is there a timeframe?

Response: The report documenting the cleanup actions is currently in review by Ecology. Ecology anticipates certification this Fall (Fall 2003), after a 30-day public comment period. Citizens should check with the City of Edmonds (Steve Bullock, 425-771-0220) regarding time frames for development.

Dirt hauling for the last interim action was pretty quiet overall without much dust.

Comment noted.

Dirt-hauling trucks were noisy.

Comment noted.

Truck traffic this summer:

-Where will the trucks travel?

Response: Trucks will travel from the Unocal Terminal onto Pine Street, then to Highway 104 going southbound, then to I-5.

-Trucks affect school bus routes, etc.

Response: The contractor will be required to prepare a traffic plan pursuant to City of Edmonds requirements for such activities at construction/cleanup sites. The traffic plan will take into account school bus routes and related access issues.

-How many more months?

Response: The lower yard interim action is anticipated to be performed from early August to late November.

Will there be repairs to Pine Street soon?

Response: Repairs to Pine Street have been completed. It is Unocal's understanding that the developer plans to renovate Pine Street as part of the development of the upper yard.

Will the open pit (Detention Basin 1) smell (hydrogen sulfide ["rotten eggs"]) after it is emptied?

Response: Unocal anticipates that hydrogen sulfide odors will be generated during removal of the material from Detention Basin No. 1; the odors are not expected to remain after removal is complete and the basin fills with storm water.

Is UNOCAL funding 100 percent of the cleanup?

Response: Unocal is funding 100 percent of the cleanup.

Are details of the cleanup costs public information?

Response: Details of the cleanup costs are not public information.

Comments by the Edmonds Citizen's Awareness Committee

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MEMORANDUM

TO: David South, Ecology
SUBJECT: UNOCAL Edmonds Former Bulk Fuel Terminal Site
Draft Interim Action Report, Work Plan for DB [detention basin] 1 and SW
Lower Yard
April 22, 2003
Review Comments
DATE: May 27, 2003

Thank you for the opportunity to review the Draft Work Plan for continued Lower Yard Interim Actions in 2003 at the UNOCAL Edmonds Site. We appreciate your participation at ECAC's May 14th community meeting as well.

We discussed our initial comments and questions about the Work Plan at the May 7th Technical Work Group [TWG] meeting. Our technical review comments, on behalf of ECAC and area residents, are provided in this memorandum. The comments are numbered for ease of reference.

1. See page 2-1, Section 2.1: the Upper Yard tanks were removed in Summer 2001, not Summer 2000 as stated.

Text corrected.

2. See page 3-1, Section 3.1.1: Ecology has noted that additional WET [whole effluent toxicity] testing will be performed on ground water samples from multiple wells at the UNOCAL site, and that ground water cleanup levels based on protection of surface water biota will not be determined for some time. Final soil cleanup levels (determined from the soils-to-ground water-to surface water pathway) are therefore not yet available. As we discussed at the May 7th TWG meeting, the Work Plan should remove references to soil removal action levels "based on protection of groundwater" (see third paragraph under Section 3.1.1). See also the language on page 3-2, section 3.1.2 (third paragraph, first sentence). That is, the intent to remove contaminated soils so that ground water will be protected is understood, but there is no numerical linkage yet between the UNOCAL-proposed action levels and final ground water cleanup levels.

Since the proposed Interim Actions are voluntary, UNOCAL may specify what action levels it is using (as long as the proposed actions are not inconsistent with a final remedy). If possible, UNOCAL should identify in the Work Plan the (preliminary) action levels it intends to use for the Lower Yard soil removal actions.

Response: The lower yard interim action is being performed as an interim action and Unocal will use Unocal-specified action levels to guide excavation. As an interim action, Unocal has elected to use action levels that are based on the protection of groundwater. The existing text clearly states that "the Unocal-specified action levels are not final MTCA [Model Toxics Control Act] cleanup levels or remediation levels for the lower yard. The Unocal-specified action levels have not been accepted by Ecology as protective of groundwater or acceptable as final cleanup levels or remediation levels." The action levels will not be available in time to include these in the final Work Plan.

3. We understand that the small area of piping runs in the Upper Yard running downslope to the Southwest Lower Yard (near the dock), which was not remediated during the soil removal Interim Actions in the Upper Yard during 2002-2003, will be addressed during the proposed Summer 2003 Interim Action program. If our understanding is correct, this should be briefly discussed under Section 3.1.2 as an extension of the proposed Summer 2003 actions.

Response: Remediation of this area is currently in progress. It will not be performed as part of the 2003 Southwest Lower Yard interim action.

4. As noted in Section 4.1, a number of ground water monitoring wells will be removed during the proposed Interim Actions. We understand that UNOCAL, Ecology, and ECAC's technical contractors will meet after completion of the Interim Actions to identify the number and locations for replacement wells, in a process identical to the one used after the first Lower Yard Interim Actions. The objective for installing replacement wells will be to monitor the changes in ground water contamination after removal of

source materials (contaminated soils and, to a lesser degree, NAPLs [non-aqueous phase liquids]).

Comment noted.

5. See page 4-4, Section 4.5.1: UNOCAL's intent to avoid breaching of the berm separating DB 1 from Willow Creek and the Edmonds Marsh, as discussed at our May 7th TWG meeting, should be made clearer in the Work Plan. Given the (non-engineered) method for berm construction and the likely proximity of soil/sediment excavation and removal to the foot of the berm, the stability of the berm may be questionable. While UNOCAL will undoubtedly take precautions to avoid damaging the berm during Interim Actions at DB 1, a brief discussion of contingencies to control releases to the creek and marsh in the event of berm disruption should be added to the Work Plan.

Response: A statement has been added to Section 4.3.1 Excavation Extent to indicate that Unocal will not excavate through the berm. The width of the berm is approximately 30 feet at its base. Berm excavation will be limited to the surface 1-foot of the berm.

6. The dewatering and soil/sediment excavations at DB 1 may result in visible seeps of Lower Yard ground water along the southern margin of DB 1. All such seeps should be documented. They may also provide an opportunity for additional sampling. Since DB 1 will not be backfilled after excavation, seeps along the margins of DB 1 may continue for some time. If seeps are coming from particularly contaminated areas (note the documented occurrence of NAPLs at some locations south of DB 1 and at [well number] LM-3; see annual Product Recovery Operations Reports), and the extensive excavations anticipated in DB 1 result in open communication throughout large areas of DB 1, the resulting recontamination of DB 1 could be widespread. UNOCAL may want to consider measures to limit the possible transport of seep contaminants within DB 1 after completion of the Interim Actions, and describe those measures in the Work Plan. The potential exists for recontamination of DB 1 sediments, to some degree and extent, after completion of the proposed Interim Actions. No barriers to ground water flow in the Lower Yard are included in the Interim Actions; indeed, the dewatering actions could promote increased ground water flows into DB 1. The post-excavation sampling results for DB 1 may therefore become less meaningful for evaluating whether final cleanup levels have been attained as time passes, before final cleanup actions for the rest of the Lower Yard are identified and completed. Some resampling could become necessary.

Response: If groundwater seepage occurs along the basin margin it will be noted in the course of construction monitoring. Seep sampling is not planned at this time. If Ecology believes sampling is warranted, Ecology will ask Unocal to collect samples. Ecology may also collect samples at any time. The technical specifications call for placement of a low permeability liner to be placed along the southern edge of the basin after excavation.

7. The Work Plan provides illustrative estimates of excavation volumes based on areas defined for cleanup. However, it is not clear to us whether (minimal) areas for soil/sediment excavation are already determined, or whether they are to be defined based on further observations (e.g., test pits) or sampling data. This is also related to the approach to be taken in the Sampling and Analysis Plan (not yet available).

Response: The estimated excavation extent for the Southwest Lower Yard was based on Remedial Investigation (RI) findings and pre-RI sample results. The final extent of excavation will be guided by field observations and progress sampling, with the lateral extent bounded by the slope and the fence line.

The estimated excavation extent for Detention Basin No. 1 was based on RI findings, observations of the lateral extent of the basin material, and reported basin construction details. Twelve test pits were excavated in the basin in May 2003. Observations indicate that the thickness of the basin material is less than that estimated using basin construction details. The final work plan reflects these findings. The final extent of excavation will be guided by field observations and progress sampling, with the lateral extent bounded by the basin berms.

8. See page 2-2, Section 2.2.1: it would be informative to also note that DB 1 was (typically) pumped by UNOCAL enhancing ground water flows into DB 1 (i.e., a larger capture zone in the Lower Yard). This identifies another pathway for contamination in DB 1 and is related to the potential ground water recontamination issue after completion of the Interim Actions (and deepening of DB 1).

Response: See response to comment 6, above. Unocal has not routinely pumped Detention Basin No. 1 since 2000, so this activity has not been included in Section 2 of the Work Plan.

9. See page 2-4, Section 2.2.4: Southwest Lower Yard, Background. As we noted to Ecology and UNOCAL at the May 7th TWG meeting, the Background History Report for the UNOCAL Edmonds Site (February 15, 1994) describes a non-UNOCAL spill that occurred very close to the proposed southwest corner work area. In section 6.4.1, page 6-3, the Background History report discusses a Burlington Northern derailment in 1971 "along the shoreline immediately south of the overhead oil transfer lines and UNOCAL approach trestle". A ruptured fuel tank on an engine unit resulted in the "loss of an undetermined amount (less than 2,000 gallons) of diesel fuel". Given its proximity to the proposed Interim Action cleanup area, that historic event is worth noting in the Work Plan. It could affect interpretations of the extent of contamination in the southwestern Lower Yard.

Response: Excavation work in the Southwest Lower Yard will be driven by Total Petroleum Hydrocarbon (TPH) concentrations, irrespective of source. The railway source of contamination will be considered when interpreting the interim action sampling results.

10. See page 2-5, Section 2.2.4: it should also be noted that NAPLs have been observed to be present in the Southwest Lower Yard.

Response: A statement has been added to Section 2 to note TPH detections in groundwater in the Southwest Lower Yard.

11. See page 3-2, Section 3.1.2 (and Section 4.3.3): given the planned depths of excavation (7.5 feet), it is possible that the soils excavated from the southwest Lower Yard will also need to be dewatered and free-draining liquids removed before being transported offsite.

Response: This is correct.

12. See page 3-4, Section 3.6: the Work Plan proposes to delineate the extent of any contamination left in place adjacent to the two defined work areas at the completion of the Interim Actions ("e.g., beyond the fence line"). Does UNOCAL intend to sample beyond its property boundary, if necessary, to complete this delineation? Has UNOCAL obtained permission from the adjacent property owners to perform such sampling? Or will the delineation along UNOCAL's property boundary be limited only to identifying the linear extent along the boundary line, as opposed to the areal extent beyond the boundary line?

With regard to the extent of soil cleanup activities in the southwestern Lower Yard, which UNOCAL is free to define as it sees fit for this voluntary action, we note the presence of a former truck load rack just northeast (within 80 feet) of the proposed excavation area (see Figure 3-2 of the Work Plan, which shows but does not label this former truck load rack). The Background History Report notes that a 10,000 gallon UST [underground storage tank] was installed there in 1976 to "collect precipitation and spilled petroleum product which may have been released during truck loading activities" (pages 3-20 et seq.). The other rail and truck loading and unloading facilities in the Lower Yard have been identified as likely sources for product releases; it seems likely that this truck load rack was also a source, although no ground water monitoring wells were installed adjacent to it.

Response: Unocal will not be collecting samples beyond the property line. The 10,000-gallon UST that served the former truck load rack northeast of the Southwest Lower Yard is not located in the work area.

13. We understand that UNOCAL will look to its cleanup contractors to propose specific equipment and methods to be used to accomplish the Interim Actions. It would be useful to include a brief discussion of the options for equipment and cleanup methods (e.g., working from the top of the DB 1 berms versus working with equipment inside of DB 1) under Section 4.

Response: Unocal anticipates that conventional equipment (track-mounted excavators) will be used by the contractor to remove soil and basin material. No work will be performed from the top of the berms, except along the south basin boundary.

14. See page 4-2, Section 4.3.1: we understand that UNOCAL intends to excavate and stockpile the top 1 foot of soil from the southwest Lower Yard, based on an assumption that it is clean (i.e., below the selected action levels), and then sample it before replacing it (details to be provided in the Sampling and Analysis Plan). A statement to that effect should be added to the Work Plan.

Response: Statements have been added to Sections 4.3.1 and 4.4 to note that the surface soil will be stockpiled and then sampled to confirm suitability for reuse.

15. See page 4-3, Section 4.3.2: the storm drain system (see Figure 3-9 in the Background History Report) extends into the southwest Lower Yard area where excavations will occur. As noted in the Interim Action Work Plan, sections of this system will likely require removal. Will they be replaced after the Interim Actions are completed? If not, will increased infiltration affect ground water flows?

Response: Per Section 4.5.2, the storm drain system will be replaced after excavation and backfilling.

16. See page 4-3, Section 4.3.3: information on the volume of surface water and ground water to be removed (order of magnitude), the throughput capacity of the API [American Petroleum Institute oil/water] separator, and the duration of additional NPDES [National Pollutant Discharge Elimination System] discharges to Willow Creek given those two factors would be helpful in describing the proposed Interim Actions.

Response: The volume of surface water and groundwater to be removed cannot be ascertained at this time. Surface water volume will depend on weather (rainfall) and groundwater removal will depend on the contractor's dewatering work sequence. The throughput capacity of the oil/water separator is 400 gallons per minute; this has been added to Section 4.3.3.

17. We understand that the estimated volumes of materials to be excavated and taken offsite, plus the importation of clean backfill, would produce on the order of 40 to 50 truck trips

per day over a 10 to 12 week period. The actual intensity and duration may be affected by UNOCAL's choice whether to perform the Interim Actions at the two defined areas of the Lower Yard concurrently or sequentially. It would be helpful in Section 4.3.5 on page 4-4 to characterize the likely intensity and duration of truck traffic related to the interim actions.

Response: A statement regarding estimated trucking intensity has been added to Section 4.3.5.

18. See page 4-4, Section 4.4: details of the analysis protocols will be provided in the Sampling and Analysis Plan. A rationale should be provided for the selection of analytical parameters, depending on the planned use(s) for the collected data. For example, if one planned use of the post-excavation sampling results will be to determine if additional cleanup actions are required in the areas addressed by these Interim Actions, the analytical parameters may depend on how the final cleanup levels are defined. If WET test results are used to define ecologically-protective concentrations for surface water based on TPH measurements, then TPH analyses may suffice. If human health risk calculations become the basis for final cleanup levels, then EPH/VPH [extractable petroleum hydrocarbon/volatile petroleum hydrocarbon] data could be required. Given that the approach for defining cleanup levels has not been conclusively established yet, the risks and benefits of various choices for analytical parameters may need to be considered. Only limited information may be required to demonstrate the degree of success in meeting UNOCAL's self-determined action levels for the Interim Actions.

Response: VPH/EPH data have been collected to date from the detention basin and the Southwest Lower Yard. Depending on the residual (post-excavation) TPH concentrations, Unocal may opt to run limited VPH/EPH analyses to augment the existing data set.

19. See Appendix D, SEPA [State Environmental Policy Act] Checklist: On page 2, under number 8, the Draft Supplemental RI Report (April 28, 2003) can now be added to the list of information sources. On page 4, the heading "Air" should be number 2 instead of "i". On page 4, under section B.2.c, it should be noted that control measures will not eliminate petroleum hydrocarbon or hydrogen sulfide odors. On page 5, under section B.3.a(6) for surface water (see also B.3.c and B.3.d), the contingencies for controlling releases in case of breaching of the berm should be mentioned (an unlikely but possible scenario resulting in environmental impacts). For a related item, on page 3 at section B.1.d the non-engineered construction of the berm could be noted (i.e., berm stability given nearby excavations is noted as a potential concern). On page 12, under section D.1, it should be noted that the dewatering of DB 1 will result in increased discharge of (treated) water to Willow Creek via the NPDES outfalls. (An order of magnitude quantification would be informative). Also on page 12, under section D.4, it could be

noted that absent a program of ongoing vegetation management control the post-cleanup DB 1 will likely become revegetated over time (i.e., will be re-established as an "emergent wetland").

Response: Ecology reviewed the SEPA checklist and has issued a Determination of Nonsignificance. Comment 19 raises good points, but they have been discussed elsewhere and Ecology was aware of them when issuing the Determination of Nonsignificance.

20. See Section 7: we understand that the as-built report will include all data collected during the Interim Actions. Therefore, information such as progress sampling analyses or waste characterization test results should also be included, as well as (in-situ) post-excavation soil sampling results that describe what is left at the site. The quantities of NAPLs and water removed during the Interim Actions should also be provided.

Response: The as-built report will include all post-excavation "performance" data (i.e., data used to confirm that action levels have been met). Progress sample results will not be included. The text has been so modified. Only a product sheen is expected to be encountered on groundwater removed from the Southwest Lower Yard; as such, an estimate of product quantity is not justified. Volumes of groundwater or surface water removed during the interim action are incidental to the remedial action and will not be quantified.

21. If truck traffic associated with the proposed Interim Actions will occur during periods when school buses are using Pine Street, UNOCAL should contact the school bus operators before cleanup actions start and explain the general scope and schedule for truck traffic, as well as measures to be taken (e.g., use of flaggers by the cleanup contractor) to manage traffic.

Comment noted.

22. We understand that UNOCAL will prepare additional planning documents such as a Sampling and Analysis Plan, a Traffic Management Plan, an Erosion and Sedimentation Control Plan, and a Health and Safety Plan before starting the Interim Actions. We request that we be provided copies of those additional planning documents as they are completed so that we can review the more extensive technical discussions therein.

Response: The existing Sampling and Analysis Plan and Health and Safety Plan for the Unocal Terminal will be updated to reflect the lower yard interim action. The erosion and sedimentation control plan will be prepared as part of the technical specifications and will be reviewed for adequacy by the City of Edmonds. The contractor will prepare the traffic management plan and it will be reviewed for adequacy by the City of Edmonds.

Courtesy copies will be provided by Unocal to the Edmonds Citizen's Awareness Committee. Additional copies may be obtained from Ecology by making a public disclosure request. These plans are not issued for public comment. Ecology will discuss concerns with interested parties, but does not plan to formally respond to comments.

Comments by the Port of Edmonds

Comment Set 1: Transmitted May 12, 2003, from Port of Edmonds

Comments on Work Plan for Detention Basin No. 1 and Southwest Lower Yard

Section 2

2.1

The third paragraph states that 23 above-ground storage tanks (ASTs) were removed in summer 2000, but it was more likely summer 2001, as indicated on the attached Figure.

Response: Correction made.

Table following 2.2.3

The sample points corresponding to the maximum TPH-D and TPH-O concentrations reported appear to be missing from the associated Figure 2-3.

Response: The maximum concentrations shown in the table are not referenced against Figure 2-3. Consult the referenced documents (GeoEngineers, 1990a, MFA, 2001a and MFA, 2003) for location-specific data.

Section 3

3.1

It is not clear from the plan that consideration has been given to the depth to groundwater at the site and how this may affect the interim action plans.

Response: The contractor's consideration for depth to groundwater has been addressed in the technical specifications for the work. A statement has been added to Section 4.3.3 (Dewatering) to note that soil excavation may occur to or below the groundwater table in the Southwest Lower Yard.

3.5

The "Unocal-specified action levels" that are to be used to guide the excavation are not specified in the Work Plan. Even though these action levels have not been accepted by Ecology, it would be of value to have these levels referenced in the Work Plan to allow evaluation of the effective completion of the interim action.

Response: Comment noted. The action levels will not be finalized at the time the Work Plan is finalized. The action levels will be noted in the Sampling and Analysis Plan (or plan addendum). A courtesy copy of this document can be provided upon request.

Section 4

4.3

Methods for controlling dust and odor, particularly during the excavation of drier material from the Southwest Lower Yard are not specified in the plan, although dust and odor could potentially impact Port and public property and activities to the west of Admiral Way.

Response: Provisions for dust and odor control will be included in the technical specifications for the work. As noted in Section 4.1, air monitoring procedures will be established for purposes of controlling dust and monitoring and controlling petroleum odors during the excavation work. Dust and odor generated during the 2001 interim action in the lower yard was controlled such that no impacts were reported from adjacent properties; similar controls are planned for the Southwest Lower Yard work.

4.3.3

The amount of water volume anticipated to be generated during the excavation activities and the method of sampling, analysis, and criteria used to determine whether water will be disposed to Basin No. 2, the oil/water separator, or to a holding tank for subsequent treatment and discharge have not been identified in the plan. It also seems likely that a holding tank will be required regardless of the method of disposal to allow for the sampling and analysis to characterize the water for disposal.

Response: The volume of surface water and groundwater to be removed cannot be ascertained at this time. Surface water volume will depend on weather (rainfall) and groundwater removal will depend on the contractor's dewatering work sequence.

The method of sampling, analysis and criteria used to determine water disposition is not detailed in the work plan, as this will vary dependent on the quality of the water. As noted in Section 4.3.3, water management will be performed pursuant to conditions of the Terminal's NPDES discharge permit.

4.4

The indicator metal to be established as a criterion for use in analysis of the cleanup effectiveness at the lower yard has not been identified. As discussed above under Section 3.5, the action levels or laboratory analytical results that will indicate that cleanup is completed (the final extent of the excavation has been reached) have not been specified in the plan. It is also not clear whether groundwater grab samples will be collected for characterization if the excavations intersect groundwater.

Response: Comment noted. Arsenic will be used as the indicator metal. The action level of 20 milligrams per kilogram (mg/kg) will be noted in the Sampling and Analysis Plan (or plan addendum). A courtesy copy of this document can be provided upon request. There are no plans to collect groundwater grab samples.

4.5.1

It is not clear whether Detention Basin No. 1 will be more likely to intercept potentially impacted groundwater if the basin is effectively deepened by 6-8 feet due to the excavation work and left in that state at the conclusion of the interim action. If so, groundwater might impact storm water collected in Basin No. 1 and discharged from the site.

Response: Twelve test pits were excavated in the basin in May 2003. Observations indicate that the thickness of the basin material is less than that estimated using basin construction details. The final work plan reflects these findings.

The technical specifications call for placement of a low permeability liner to be placed along the southern edge of the basin after excavation, to limit the movement of contaminated groundwater into the basin.

Figure 2

This figure does not show the location of Admiral Way and the Port of Edmonds facilities located west of the Unocal Site.

Response: Figures 2-1, 2-2 and 2-3 do not show Admiral Way and the Port facilities. Admiral Way and a portion of the Port facilities are shown on Figure 3-2.

Comment Set 2: Transmitted March 17, 2003, from Port of Edmonds

**RE: Review of February 21, 2003 Draft Interim Action Report
Work Plan for Detention Basin No. 1 and Southwest Lower Yard
Unocal Edmonds Terminal, Prepared for Unocal Corporation by Maul Foster and
Alongi, Inc.**

1. The report (i.e., Work Plan) provides a very general description of the proposed interim action and defers much of the details needed to make a more definitive assessment of the interim action to documents to be prepared later. Specifically, the report defers preparation of the compliance monitoring plan, safety and health plan, sedimentation and erosion control plan, and traffic control plan and also provides little specifics on important construction considerations. Omission of the compliance monitoring plan and safety and health plan appears not to comply with WAC 173-340-430(7) of the MTCA regulation, which states that these plans are required components of an interim action report.

Response: The work will be performed as an interim action that is not intended to be a final cleanup action for the lower yard. As such, Ecology is not requiring preparation of a compliance monitoring plan. As noted in Section 4.1, the site health and safety plan (HASp) will be updated to cover the lower yard interim action. The erosion and sedimentation control plan will be prepared as part of the technical specifications and will be reviewed for adequacy by the City of Edmonds. The contractor will prepare the traffic management plan and it will be reviewed for adequacy by the City of Edmonds.

2. As a result of these omissions, many important questions regarding the interim action cannot be answered including:

- What are the proposed cleanup levels, and how were they derived?

Response: See Sections 3.1 and 3.5 of the work plan. The interim action is not intended to achieve cleanup standards for the lower yard. As such, cleanup levels and points of compliance have not been defined for this interim action. Unocal will use Unocal-specified action levels to guide excavation.

- How many confirmation samples will be collected, where will they be collected, and what analyses will be performed on the samples?

Response: See Section 4.4 of the Work Plan for sample analyses. Samples will be collected post-excavation; the number of samples has not been determined. Sampling details will be developed during the update of the Sampling and Analysis Plan.

- What measures will be taken to dewater the excavation areas and/or stabilize the excavated soil, and what criteria will be used to decide on the disposition of the dewatering water?

Response: See Section 4.3.3 Dewatering. The contractor will determine specific dewatering methods. The criteria used to determine water disposition is not detailed in the work plan, as this will vary dependent on the quality of the water. As noted in Section 4.3.3, water management will be performed pursuant to conditions of the Terminal's NPDES discharge permit.

3. Additional Work Plan comments include:

- Cleanup levels should also be developed for cPAHs [carcinogenic polycyclic aromatic hydrocarbons] and nPAHs [non carcinogenic polycyclic aromatic hydrocarbons], and confirmation samples should be analyzed for these constituents. Were metals detected in the Southwest Lower Yard?

Response: See response to Question 2, first bullet, above. See Section 4.4 of the Work Plan for sample analyses. Metals were detected in surface soil beneath former pipeline runs in the Southwest Lower Yard.

- A figure similar to Figure 2-2 showing TPH concentrations should be provided for the Southwest Lower Yard.

Response: Please refer to Figure 5-3 of the Supplemental Remedial Investigation Report (MFA 2003) for this information.

- Figure 3-2 shows the boundaries of the Southwest Lower Yard, but does not delineate the excavation area.

Response: The dashed line on Figure 3-2 Planned Excavation Area, Southwest Lower Yard, depicts the excavation area.

- Section 4.3.5 should state that soil containing free draining liquid will not be allowed to be transported off the site as required by Washington State Department of Transportation requirements.

Response: A statement has been added to Section 4.3.5.

- Section 7 states that "Technical requirements in contractor bid documents will be transmitted to Ecology for review and comment no later than the time they are transmitted to the contractor(s)." What will be included in these requirements? If they are made available for review at the same time they are provided to the contractor, will the schedule permit changes to be made to the plan prior to

commencement of construction? If not, the proposed schedule precludes effective review and modification of technical requirements as may be necessary.

Response: Ecology has reviewed and approved the technical requirements for the actions to be taken in the Southwest Lower Yard. Ecology plans to review technical requirements for actions to be taken in Detention Basin 1 in time for Unocal to issue an addendum if necessary. Ecology is aware of the fast-track nature of this review process, but believes the benefits of moving ahead with cleanup during the dry part of the year and the straightforward nature of this interim action make this fast-track process desirable.