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LETTER AND COMMENTS FROM FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REGARDING INTERIM SOURCE REMOVAL AND SITE ASSESSMENT REPORT FOR KEY WEST PIPELINE COMPANY (ALSO CALLED TRUMBO POINT TANK FARM)NAS KEY WEST FL
12/23/2008
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Florida Department of Environmental Protection

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December 23, 2008

Mr. Dana Hayworth, P.G.
Naval Air Station Jacksonville
Building 135
P.O. Box 30
NAVFACSOUTHEAST

Jacksonville, FL 32212

Re: Interim Source Removal and Site Assessment Report for Key West Pipeline Company (also called Trumbo Point Tank Farm) Naval Air Station Key West, Florida

Dear Mr. Hayworth:

The Department has completed the technical review of the above referenced document dated August 21, 2008 (received August 27, 2008).

1. **Page 1, Site Setting and History, 1st Paragraph, 3rd Sentence:** *"Trumbo Point Annex was constructed in 1918 using dredged materials so that the property could be used as a seaplane training and blimp facility."* US Navy historical information indicates seaplane and blimp facilities operations commenced in the 1930s. The dredge materials, referenced above, were a result of the Flagler Railroad System to create a rail station for this corporation. Please correct this information in the text.

2. **Page 1, Site Setting and History, 1st Paragraph, 4th Sentence:** *"Beginning in 1942, fuel products such as JP-4, JP-5, Avgas, marine diesel, Number 6 fuel oil, Bunker C oil, and waste oil have been brought to the TPFF by tanker and stored in numerous below ground, cut and cover, and above ground storage tanks."* Historical information indicates that JP-5 fuel products were not present prior to 1964. Please correct this information in the text.

3. **Site Setting and History, 6th Sentence:** *"Figure 2 shows the locations of...areas that the Navy previously documented as containing free product and soil and groundwater impacts related to former petroleum releases...documented in the 1996 Contamination Assessment Report (CAR), the 1999 Remedial Action Plan (RAP), and the 2006 Annual Status Report. These documents identify petroleum impacts that extend across large portions of the TPFF,*

including the area now operated under License from the Navy to KWPC." It would be helpful if LFR specified which report Figure 2 was taken from since there are three reports noted that span a period of over 12 years. It would be helpful if LFR provided current free product maps that depicted recent site conditions in the vicinity of Tank 1 prior to the release, followed on with subsequent maps of the source removal progress being made. Please provide this information in this document.

4. **Page 2, September 2007 Fuel Release, 2nd Paragraph, 2nd Sentence:** *"The excavation work resulted in the discovery of a pin sized hole on the bottom of KWPC Pipeline #2 at a location just west of where the 12" pipeline that connects to KWPC Tank #1 enters the ground."* The discovery of a pin sized hole differs from what was reported as a structural crack at the bottom of the 12" pipeline. Please provide photographs/documentation to support this conclusion and the depth below land surface of this area of the pipeline.

5. **Page 4,Excavation and Construction of Recovery Trenches, French Drain Systems, and Recovery Wells, 5th Sentence:** *"The recovery trenches were excavated with a backhoe to a depth of approximately 12 ft bls and the excavated soil was stockpiled within the bermed area of KWPC Tank #1."* The depth of the recovery trenches noted does not correspond with the reported measured depth of approximately 7' 0" by Navy Personnel. Please document why this discrepancy exists in this document.

6. **Page 4, Excavation and Construction of Recovery Trenches, French Drain Systems, and Recovery Wells, 2nd Paragraph, 5th Sentence:** *"These trenches were excavated using a backhoe to depths of approximately 8 ft bls."* The report shows inconsistencies with the reported depth of these trenches. Please clarify whether the depths are 12 feet or 8 feet or 7 feet. Either way it would appear that these depths reached the water table. Please confirm. See previous comment regarding depth of recovery trenches.

7. **Page 6, Soil Assessment 1st and 2nd Paragraphs:** *"LFR collected numerous surficial soil samples from the immediate vicinity of KWPC Pipeline #2 for the purpose of delineating petroleum contaminated soils. Figure 8 shows the locations where the soil sampling was conducted. Soil screening of volatile organic vapors and soil sampling for laboratory analysis were performed to delineate the extent of soil impacts that could be reasonably attributed to the KWPC September 2007 pipeline failure...The sampling depths...(2 feet below ground surface)...were selected to better evaluate the potential effects of the recent release versus soil impacts attributable to former releases...Based on the soil OVA screening results and the soil analytical results, the extent of soil impacts attributable to the KWPC September 2007 pipeline failure has been reasonably delineated, as depicted on Figure 8."* Of the 12 soil samples collected and shown in Figure 8, only two samples, SS4-2' and SS6-2', were listed as having been submitted for analytical testing. One was collected north of the excavation pit (SS6) and other at the southeastern edge of the excavation pit. The sampling depth was noted to be 2 feet below grade with the caveat that this is where the pipeline release occurred and that going below this would only detect past releases. Please provide the rationale and technical documentation used to support that going farther than 2 feet below grade interferes with past releases since the depth of the pipeline is greater than two feet below grade where the release occurred.

It was further noted that going below 3.5 feet would encroach on the "historic measurement of free product throughout this area as reflected in earlier Navy technical reports." Please provide or cite the specific technical report(s) and data that LFR is referencing to support free product accumulation prior to the release.

Basing a conclusion that the two soil samples collected out of 12 has sufficiently delineated the vertical and horizontal extent of their release does not provide conclusive scientific evidence of the soil conditions with regard to the current release. Please provide additional data to support this conclusion, and that this approach is compliant with Florida Administrative Code (F.A.C.) Rule 62-770.600(4)(f)1. and Chapter 62-777 F.A.C.

8. **Page 6, Soil Assessment, 6th Sentence**: *"The technical documents provided by the Navy had previously delineated soil impacts extending across the entire bermed area of KWPC Tank #1."* According to Navy personnel and their contractor, delineation or soil assessments have not been conducted across the entire site around Tank #1. Please provide or cite the specific technical report(s) and data that LFR is referencing.

9. **Page 6, Soil Assessment, 2nd Paragraph, 4th Sentence**: *"Soil impacts exhibiting high organic vapor readings would be expected to be observed anywhere within the bermed area of KWPC Tank #1 below 3.5 ft bls due to the historic measurement of free product throughout this area as reflected in earlier Navy technical reports."* Please provide or cite the specific supporting technical reports and data that LFR used to make this determination.

10. **Page 7, Soil Assessment, 4th Paragraph, 8th Sentence**: *Based on the soil OVA screening results and the soil analytical results, the extent of soil impacts attributable to the KWPC September 2007 pipeline failure has been reasonably delineated, as depicted on Figure 8. The excavation work conducted during the repair and replacement of the KWPC Pipeline #2 resulted in the removal of the soil depicted as petroleum impacted on Figure 8. On January 17, 2008 this soil was transported for off-site disposal as described above along with other impacted soil removed during the excavation of the recovery trenches. As a result, the petroleum contaminated soil reasonably attributable to the KWPC September 2007 pipeline failure located above the smear zone has been removed from the site.* 12 soil samples were collected for screening, and two samples were selected for laboratory analysis: one with the highest OVA screening result (SS6, located north of the excavation), and one with no OVA detections above background (SS4, located at the eastern end of the trench on the south side). Neither sample contained constituents at concentrations exceeding the direct contact SCTL. Please provide a technical explanation why other soil samples were not selected and analyzed pursuant to F.A.C. 62-770.600(4)(f)1 and 62-777. These regulations provide definitive requirements that must be met for delineation of soil to be considered fully defined and meet regulatory compliance.

There appears to be too many data gaps to make a conclusion that the impact to subsurface soils has been delineated with only two soil samples. This also leaves doubt about whether the groundwater has been impacted since the water table is reported by LFR to be at 3.5 feet below grade (it should be noted that the depth to groundwater at the time of the discovery of the release was ~5.5 feet below grade). Please provide evidence to support this rationale.

11. **Page 7, Groundwater Assessment, 1st Paragraph:** "*As indicated by Figure 2, groundwater impacts have been previously delineated across most of the bermed area for KWPC Tank #1 in connection with prior assessment of the Pre-existing Petroleum Impacts...CH2M Hill is currently performing assessment activities at the TPFF to better delineate the extent of dissolved groundwater impacts...The dissolved groundwater plume at the TPFF associated with the Pre-existing Petroleum Impacts encompasses an area much greater than that associated with the KWPC September 2007 pipeline failure and will continue to be addressed by the Navy's ongoing assessment and remediation of the Pre-existing Petroleum Impacts.*" See previous request to provide which report Figure 2 was taken from to ascertain how the data was gathered (laboratory testing, OVA, PID or other means) and from what depth in the soil column (vadose zone verses saturated soil) to construct the plume spatial extent.

12. **Page 7, Groundwater Assessment, 1st Paragraph, 5th Sentence:** *Given the continued presence of free product outside of the boundaries reasonably attributable to the KWPC September 2007 pipeline failure, additional groundwater assessment is not warranted.* There does not appear to be a prevalent evaluation or discussion of potential impact to groundwater as a result of the release to subsurface soil since it is apparent that the quantity of fuel released certainly has the ability to leach into the shallow groundwater. Further, this approach is not consistent with FAC 62-770. Provide a plan to address groundwater impact.

13. **Page 8, Free Product Monitoring, 2nd Paragraph, first Sentence**: *The heterogeneous hydrogeologic conditions underlying the TPFF have resulted in the sporadic behavior of the free product. The locations where free product have been observed and the measured product levels vary greatly within the bermed area of KWPC Tank #1.*" In review of this information, this does not reflect the US Navy's prior results in this area over the last year and prior to the September 2007 pipeline release. Data from a number of piezometers and monitoring wells demonstrated a steady downward path toward attenuation or no detection of free product in the area of the release. The Navy has accumulated a comprehensive amount of free product data over the past year to support a remedy at the site. Free product fluctuations and tidal influenced events are well documented and are the basis of the Navy's rationale not to move forward with further delineation of the dissolved phase groundwater but to conduct isolated removal of soil/smear zone at hot spot areas. Please provide a technical explanation supported by data as to why LFR has proposed that the KWPL release has not had any further impact to groundwater.

14. **Page 8, Comparison of Current Product Levels with Historically Measured Product Levels, 2nd Paragraph, 5th Sentence:** *"The historical data shows that several well points have experienced considerable fluctuation in product level measurements occurring over time prior to the September 2007 fuel release. There have been periods of high measurements of free product followed by periods of little to no observation of free product followed again by periods of significantly elevated measurements of free product, all occurring prior to the KWPC September 2007 pipeline failure. This anomaly may be explained by the historically random distribution of petroleum product within the bermed area for KWPC Tank #1 and the heterogeneous nature of subsurface soil conditions that result in difficult to define preferential flow paths.*" In review of this information, this does

not reflect the US Navy's prior results in this area over the last year and prior to the September 2007 pipeline release. Data from a number of piezometers and monitoring wells demonstrated a steady downward path toward attenuation or no detection of free product in the area of the release. The Navy has accumulated a comprehensive amount of free product data over the past year to support a remedy at the site. Free product fluctuations and tidal influenced events are well documented and are the basis of the Navy's rationale not to move forward with further delineation of the dissolved phase groundwater but to conduct isolated removal of soil/smear zone at hot spot areas. Please provide a technical explanation supported by data as to why LFR has proposed that their release has not had any further impact to groundwater.

15. **Page 8, Comparison of Current Product Levels with Historically Measured Product Levels, 3rd Paragraph, 5th Sentence:** *"At well MW-JP-1, close to 0.5 feet of free product were measured in this well point between August 2005 and November 2005 and again in October 2006, with periods of little to no measurements occurring before or in between such periods. In September 2007, a significant spike in the level of product measured provides evidence of the KWPC September 2007 pipeline failure. The more recent measurements of this well point show that the thickness of product remaining is near to or consistent with historical measurements prior to the KWPC September 2007 pipeline failure."* In review of this information, this does not reflect the US Navy's prior results in this area over the last year and prior to the September 2007 pipeline release. Data from a number of piezometers and monitoring wells demonstrated a steady downward path toward attenuation or no detection of free product in the area of the release. The Navy has accumulated a comprehensive amount of free product data over the past year to support a remedy at the site. Free product fluctuations and tidal influenced events are well documented and are the basis of the Navy's rationale not to move forward with further delineation of the dissolved phase groundwater but to conduct isolated removal of soil/smear zone at hot spot areas. Please provide a technical explanation supported by data as to why LFR has proposed that their release has not had any further impact to groundwater.

16. **Page 9, Comparison of Current Product Levels with Historically Measured Product Levels:** *"The September 2007 fuel release caused elevated product levels in many of the well points for a certain period of time however a comparison of the recent to historical data shows that product levels have always been sporadic in nature. Increases and decreases in measured product levels have occurred at the site both prior to and after the September 2007 fuel release. Based on the absence of any accumulation of measurable free product in the French Drain recovery sumps over the past several months and a review of the historical data, it is reasonable to conclude that recoverable free product reasonably attributable to the KWPC September 2007 pipeline failure has been recovered."* In review of this information, this does not reflect the US Navy's prior results in this area over the last year and prior to the September 2007 pipeline release. Data from a number of piezometers and monitoring wells demonstrated a steady downward path toward attenuation or no detection of free product in the area of the release. The Navy has accumulated a comprehensive amount of free product data over the past year to support a remedy at the site. Free product fluctuations and tidal influenced events are well documented and are the basis of the Navy's rationale not to move forward with further delineation of the dissolved phase groundwater but to conduct isolated

removal of soil/smear zone at hot spot areas. Please provide a technical explanation supported by data as to why LFR has proposed that their release has not had any further impact to groundwater.

17. **Page 9, 1st Paragraph, 2nd Sentence:** *"The results of this work have shown that the recoverable free product reasonably attributable to the KWPC September 2007 pipeline failure has for all practical purposes been recovered* In review of this information, this does not reflect the US Navy's prior results in this area over the last year and prior to the September 2007 pipeline release. Data from a number of piezometers and monitoring wells demonstrated a steady downward path toward attenuation or no detection of free product in the area of the release. The Navy has accumulated a comprehensive amount of free product data over the past year to support a remedy at the site. Free product fluctuations and tidal influenced events are well documented and are the basis of the Navy's rationale not to move forward with further delineation of the dissolved phase groundwater but to conduct isolated removal of soil/smear zone at hot spot areas. Please provide a technical explanation supported by data as to why LFR has proposed that their release has not had any further impact to groundwater.

18. **Page 9, 2nd Paragraph, 1st Sentence:** *"Site assessment activities included the delineation of petroleum contaminated soils reasonably attributable to the KWPC 2007 pipeline failure."* Of the 12 soil samples collected and shown in Figure 8, only two samples, SS4-2' and SS6-2', were listed as having been submitted for analytical testing. One was collected north of the excavation pit (SS6) and other at the southeastern edge of the excavation pit. The sampling depth was noted to be 2 feet below grade with the caveat that this is where the pipeline release occurred and that going below this would only detect past releases. Please provide the rationale and technical documentation used to support that going further than 2 feet below grade interferes with past releases since the depth of the pipeline is greater than two feet below grade where the release occurred.

    It was further noted that going below 3.5 feet would encroach on the "historic measurement of free product throughout this area as reflected in earlier Navy technical reports." Please provide or cite the specific technical report(s) and data that LFR is referencing to support free product accumulation prior to the release.

    Basing a conclusion that the two soil samples collected out of 12 has sufficiently delineated the vertical and horizontal extent of their release does not provide conclusive scientific evidence of the soil conditions with regard to the current release. Please provide additional data to support this conclusion, and that this approach is compliant with Rule 62-770.600(4)(f)1. and Chapter 62-777 F.A.C.

19. **Page 9, 3rd Paragraph, 1st Sentence:** *"Previous site assessment work performed by the Navy for the TPFF establishes that the free product, soil and groundwater impacts reasonably attributable to the KWPC September 2007 pipeline failure were located entirely within the reported boundaries of the Pre-existing Petroleum Impacts."* It would be helpful if LFR specified which report Figure 2 was taken from since there are three reports noted that span a period of over 12 years. It would be helpful if LFR provided current free product

maps that depicted recent site conditions in the vicinity of Tank 1 prior to the release, followed on with subsequent maps of the source removal progress being made. The depth of the recovery trenches noted does not correspond with the reported measured depth of approximately 7' 0" by Navy Personnel.

The report shows inconsistencies with the reported depth of these trenches, please clarify whether the depths was 12 feet or 8 feet or 7 feet, either way it would appear that these depths reached the water table, please confirm. See previous comment regarding depth of recovery trenches.

According to Navy personnel and contractor, delineation or soil assessments have not been conducted across the entire site around Tank #1. Please provide or cite the specific technical report(s) and data that LFR is referencing.

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Basing a conclusion that the two soil samples collected out of 12 has sufficiently delineated the vertical and horizontal extent of their release does not provide conclusive scientific evidence of the soil conditions with regard to the current release. Please provide additional data to support this conclusion, and that this approach is compliant with Rule 62-770.600(4)(f)1. and Chapter 62-777 F.A.C.

20. **Page 9, 3rd Paragraph, 2nd Sentence**: *"As such, the assessment of groundwater impacts reasonably attributable to the KWPC September 2007 pipeline failure is deemed complete."* In review of this information, this does not reflect the US Navy's prior results in this area over the last year and prior to the September 2007 pipeline release. Data from a number of piezometers and monitoring wells demonstrated a steady downward path toward attenuation or no detection of free product in the area of the release. The Navy has accumulated a comprehensive amount of free product data over the past year to support a remedy at the site. Free product fluctuations and tidal influenced events are well documented and are the basis of the Navy's rationale not to move forward with further delineation of the dissolved phase groundwater but to conduct isolated removal of soil/smear zone at hot spot areas. Please

provide a technical explanation supported by data as to why LFR has proposed that their release has not had any further impact to groundwater.

21. **Page 9, 4th Paragraph:** *"The results of both the source removal and site assessment work performed by LFR, including data generated previously on behalf of the Navy in connection with the Pre-existing Petroleum Impacts, show that soil and groundwater quality at the property that is the subject of the KWPC/Navy License Agreement is now substantially in the same condition as it was prior to the discharge of petroleum product resulting from the KWPC September 2007 pipeline failure. It is likely that the extensive source removal activities implemented immediately following the KWPC September 2007 pipeline failure have actually improved conditions at the TPFF."* The analytical and technical data provided in this report do not provide conclusive evidence that the horizontal and vertical extent of the subsurface soil and groundwater conditions have been fully delineated as a result of the release from the KWPC pipeline. These data inconsistencies need to be addressed as noted in the comments section and submitted for review.

If I can be of any further assistance with this matter, please contact me at (850) 245-8998.

Sincerely

Tracie L. Bolanos

Tracie L. Bolanos
Remedial Project Manager

JJC JJC ESN ESN
by
ESN