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STATE WATER RESOURCES CONTROL BOARD

IN THE MATTER OF: **CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN DIEGO REGION;** **TIME SCHEDULE ORDER** **NO. R9-2011-0052** **IN RE:** **R9-2008-0002** **DISCHARGER: KINDER MORGAN ENERGY PARTNERS**	**PETITION AND REQUEST FOR REVIEW AND INTERVENTION BY THE STATE WATER RESOURCES CONTROL BOARD** CAL. WATER CODE § 13320 23 CAL. CODE REGS.§§ 2050,2052

INTRODUCTION

This petition pursuant to California Water Code ("CWC") Section 13320 by the City of San Diego ("City") presents an improper action of the San Diego Regional Water Quality Control Board (SDRWQCB) in its administration of the cleanup of the polluted groundwater aquifer under and near the Mission Valley Terminal. At issue is the adoption by the SDRWQCB of Time Schedule Order R9-2011-0052 (the "TSO") on September 14, 2011.[1] The TSO will

[1] The adopted version of the TSO is attached as Exhibit1. The adopted version differs from the Tentative TSO (Item 7 on the agenda for September 14, 2011 meeting) in that it contain a Finding 8 relative to anti-degradation policy, addressed *infra*. The noticed Tentative TSO is attached as Exhibit 3 and the supporting documents which accompanied it are attached as Exhibits 2-10.

improperly allow Kinder Morgan Energy Partners ("Kinder Morgan") to pollute Murphy Canyon Creek with Total Dissolved Solids ("TDS") in concentrations which significantly exceed the creek's receiving water limits for TDS as established in the Basin Plan. The cleanup by Kinder Morgan under Cleanup and Abatement Order No. 92-01 ("CAO") has been going on for over 20 years in a manner prejudicial to the interests of the City. The cleanup has been allowed to be pursued under R9-2008-0002[2] which permits Kinder Morgan's discharge of treated groundwater to Murphy Canyon Creek. The TSO is the latest example of improper action or inaction. This petition is not the first time the City has appealed to the State Water Resources Control Board ("SWRCB") over actions or inactions of the SDRWQCB in connection with the CAO.[3] The City has consistently complained about the SDRWQCB's permission to Kinder Morgan to waste the City's water by allowing Kinder Morgan to discharge treated groundwater to Murphy Canyon Creek instead of putting it back into the aquifer.[4] As set forth herein, the water wastage remains an unresolved problem as much as the TDS interim effluent limits established in the TSO. Setting the issue of the massive waste of water aside for a moment, the City maintains that if Kinder Morgan must discharge to live stream, it must conform its discharge to surface water quality objectives right now.

The SDRWQCB's action in adopting the TSO is bewildering because it is issued at a time when the beneficial uses of the subject hydrologic unit of Murphy Canyon Creek (Mission San Diego Hydrologic Area, 907.11) is a water quality limited water body for TDS per Section 303(d) of the Clean Water Act.[5] The TSO admits that Murphy Canyon Creek has limited, if any,

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[2] Exhibit 11.

[3] The City previously filed a petition on October 9, 2009 over inaction by the SDRWQCB in failing to require Kinder Morgan to re-inject treated groundwater back into the aquifer instead of wasting it by discharge to stream and ocean. The SWRCB declined to grant City relief on that petition because it did not deem a letter from the SDRWQCB Executive Officer dated September 10, 2009 to be a failure to act on City's requests that Kinder Morgan be required to re-inject the water into the aquifer. See letter from Assistant Chief Counsel Theodore Cobb to City dated October 14, 2009 and referenced petition. (Exhibit17)

[4] As discussed *infra,* through an Errata Sheet (Exhibit 10) issued before the hearing on the TSO, the SDRWQCB modified the TSO to postpone action on a request by Kinder Morgan to again increase the flow from 795,000 to 1.26 million gallons per day.

[5] TSO, Section 4.e, Supporting Document No. 2 (Exhibit 1)

assimilative capacity for additional TDS loading.[6] But despite that fact the SDRWQCB decided to permit Kinder Morgan to load the creek with more TDS anyway. The SDRWQCB's illogic on this added pollution seems to be that it should be permissible to allow Kinder Morgan to pollute the creek with TDS levels significantly in excess of water quality objectives just because the creek already has elevated TDS levels.

The City is the local agency with jurisdiction over the MS4 and it objected to the additional TDS from the Kinder Morgan discharge. The adoption of the TSO by the SDRWQB was flawed because the order was entered over the City's objection and it (a) ignored requirements in R9-2008-0002 which require that the enrolled discharger obtain the prior approval of the local agency with jurisdiction over the municipal separate storm sewer system (MS4) and demonstrate infeasibility of alternatives to discharging extracted groundwater to the MS4; (b) it authorized interim effluent limits for discharges into the MS4 in a manner causing, or threatening to cause, a condition of pollution, contamination, or nuisance in waters of the State; (c) it improperly separated the Kinder Morgan request to discharge an additional 465,000 gallons per day above the whopping 795,000 gallons per day already permitted (total request now 1.26 million gallons per day) from the scope of the TSO and plans action on that flow increase separately through its Executive Officer; and (d) the SDRWQCB made a conclusion regarding anti-degradation policy (State Board Resolution No. 68-16) after the hearing was closed and just before voting on the TSO without stating any evidence in support of that last minute finding.

<u>The Tentative TSO Prior to Hearing and Separation of the Flow Increase Request</u>

The chronology of the TSO and the several changes that were made to it from the time the tentative order was published for comment and when it was adopted by the SDRWQCB need to be considered carefully in context. The impetus for the TSO was actually a request by Kinder Morgan (through its consultant, Arcadis) to change its enrollment in the R9-2008-0002 to increase the maximum permitted live stream discharge of the treated groundwater from 795,000

[6] Id.

gallons per day to 1.26 million gallons per day.[7] The reason for this request is the fact that Kinder Morgan's cleanup effort is still failing to meet the schedule in Addendum 5 of the CAO which established December 31, 2013 as the completion date for the off-terminal remediation. This most recent request represented the third request for an increase in the maximum allowed flow. In 1997 the authorized flow rate was 300,000 gallons per day.[8] In 2009, when the City last appealed the SDRWQCB's authorization to Kinder Morgan to waste the groundwater to the stream, the flow was authorized to be 505,000 gallons per day.[9] Less than six months later, on December 31, 2009 the SDRWQCB again permitted Kinder Morgan to increase the discharge flow to the creek, that time up to 795,000 gallons per day.[10] (It should be mentioned here as an aside that the City has found no record of ever having been notified by Kinder Morgan or the SDRWQCB of this last flow increase request before the letter was issued authorizing up to 795,000 gallons per day to be discharged to the MS4.) The Tentative TSO in this matter (Exhibit 4) would have granted Kinder Morgan's request for another increase from 795,000 up to 1.26 million gallons per day, but this did not happen, at least not yet. Action on the flow increase request was deferred out of the adopted TSO just before the hearing, as explained below, and the flow increase request remains under consideration by the SDRWQCB. It is important to understand that a primary intended purpose of the Tentative TSO was to permit Kinder Morgan to again greatly increase the volume of the discharge; setting an interim effluent limit for TDS was a second substantial purpose.

On or shortly before the date of the hearing the SDRWQCB staff issued an Errata Sheet which removed the tentative authorization of increased flow to 1.26 million gallons per day from the Tentative TSO and replaced it with a statement that that the request for this flow increase would be "addressed through a separate action and any subsequent approved increase in flow

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[7] Letter from Marcelo Garbiero and Jennifer S. Rothman dated August 24, 2010, Supporting Document No. 3 (Exhibit 4)

[8] Letter from John Robertus to P.L.Avery February 26, 1997 (Exhibit 16c)

[9] Letter from John Robertus to Scott Martin, June 23, 2009 (Exhibit 16b)

[10] Letter from David Gibson to Scott Martin, December 31, 2009 (Exhibit 16a)

must comply with the terms of this Order."[11] This had the effect of removing the massive flow increase issue from the TSO hearing, reducing its immediate significance to the setting of an interim effluent limit for TDS. SDRWQCB Executive Officer David Gibson testified at the hearing about the rationale for separating the flow increase request from the TSO, explaining that he wanted to confer with the City first, which to his credit he has undertaken to do.[12] However, the City takes exception to the TSO's interim effluent limits for TDS separate and apart from the question of increased flow. It also maintains that the two issues of (a) massively increased flow and (b) interim TDS effluent limits were improperly separated. Moreover the language from the Errata Sheet and adopted in the final TSO, plus testimony at the hearing,[13] suggests that the SDRWQCB is poised to grant yet another flow increase, which if and when granted would, for purposes of total mass load to stream, not be disassociated from the TDS concentration levels which were approved in the TSO. Thus while the flow increase request was removed from the TSO and is not a primary subject of this petition, except as this petition maintains that the flow increase request and the interim effluent limit must be considered together, this context is important to understand, and should not be overlooked by the SWRCB, as it remains in the backdrop of the TSO.

Comments by City on Tentative TSO

Before the Errata Sheet was issued removing the flow increase request from the scope of the TSO, the City had filed comments on the Tentative TSO on July 26 and 27, 2011. It did so through two of its departments: (1) its Public Utilities Department for its water utility, which focused on the proposed flow increase and waste of City water[14]; and (2) its Transportation and Storm Water Department which focused on the lack of consent from the City as MS4 operator

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[11] Undated Errata Sheet, Supporting Document No. 8 for Item 7 of the September 14, 2011 meeting, received by City on morning of hearing. (Exhibit 10).

[12] Testimony of David Gibson, Transcript p. 6 /6-21 (Exhibit 12)

[13] Testimony of Ben Neill suggested that another flow increase is a foregone conclusion, a matter of "when" not "if" it will be granted by a letter from the Executive Officer. Transcript 17 /17-18

[14] Letter from Marsi Steirer, Supporting Document No. 6a of the September 14, 2011 meeting. (Exhibit 8a)

for Kinder Morgan to use the MS4 for discharge of its treated groundwater, the nuisance effect and costs that increased flow would have on maintaining the MS4, the excessive proposed interim effluent limits for TDS, and the time that Kinder Morgan would be allowed to discharge under those limits. [15]

Since the flow increase issue was deferred from the action, this discussion of comments is confined primarily to the comments of the City Transportation and Storm Water Department relative to the TDS discharge. In particular the City's filed comments explicitly complained that the SDRWQCB was failing to enforce provision II.D of the R9-2008-0002 which requires prior approval of the agency with jurisdiction over the MS4 before the discharge can occur.[16] The City expressed its concern for the water quality standards of the receiving water and pointed out that the TSO would permit Kinder Morgan to discharge treated groundwater effluent with TDS at up to 2,400 mg/L when the receiving water Basin Plan standard is 1,500 mg/L. The City indicated its disinclination to approve such a discharge given the Basin Plan objectives.

The City also cited the Tentative TSO's own recognition that Kinder Morgan's proposed discharge to Murphy Canyon Creek "has a reasonable potential to contribute to an in-stream excursion above water quality objectives for TDS as set forth in the Basin Plan" which would be in violation of Discharge Prohibition IV.C and Receiving Water Limitation VI.A.8 (of R9-2008-0002).[17] The City's letter further complained, *inter alia*, that its MS4 Permit, R9-2007-0001 (MS4 Permit)[18], contains prohibitions against City allowing exactly the same kind of discharge that the SDRWQCB is now allowing Kinder Morgan to make. The City's letter complained that City was required to not passively accept discharges containing pollutants that had not been reduced to the maximum extent practicable (MS4 Permit Section D.3.d); that discharges into and from MS4s in a manner causing, or threatening to cause, a condition of pollution, contamination,

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[15] Letter from Kris McFadden, Supporting Document No. 6b of the September 14, 2011 meeting. (Exhibit 8b).

[16] Id. at pp. 1-2

[17] McFadden letter of July 26 at p. 2 (Exhibit 8b) citing TSO finding 4

[18] R9-2007-0001 without attachments (Exhibit 14.

or nuisance in waters of the state are prohibited (MS4 Permit Section A.1, P. 11); that discharges from MS4s which cause or contribute to the violation of water quality objectives developed to protect beneficial uses are prohibited. (MS4 Permit Section A.3 p. 12)

The TSO admits that the effluent limit of the receiving water in Murphy Canyon Creek is 1,500 mg/L[19]. Section VI.A.8 of R9-2008-0002 states:

> Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this WDR. The discharge of groundwater extraction waste from any site shall not, separately or jointly with any other discharge cause violations of the following water quality objectives. These limitations apply unless more stringent provisions exist in either the Basin Plan, or an applicable State plan....8 Mineral Objectives for Inland Surface Waters (fresh): San Diego Hydrographic Unit 7.11 Objective (mg/L) TDS – 1500.[20]

It is therefore difficult to understand how discharge of effluent containing TDS concentrations of up to 2,400 mg/L will not, *separately* or *jointly* with any other discharge, cause violations of the 1,500 mg/L receiving water limitation. It will by its very definition contribute to violation of the receiving water standard.

<u>SDRWQCB Response to City Comments</u>

The SDRWQCB staff responded to the City's letters on August 31, 2011.[21] The essence of the response was to dismiss all of the City's legitimate concerns and to rationalize the proposed Kinder Morgan discharge as a cleanup order. The City understands that this is a cleanup, it encourages and expects the cleanup. The City also understands that the SDRWQCB has some discretion because it is a cleanup. However in this case the exercise of this cleanup oversight amounts to an abuse of the City, especially when the receiving water is CWA 303(d) listed as impaired for TDS and the City is being put on a total maximum daily load regimen by the SDRWQCB for TDS in the San Diego River watershed, which includes Murphy Canyon

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[19] TSO Section 4.a. (Exhibit 1).

[20] TSO Section 4.c (Exhibit 1)

[21] Letter from Ben Neill to Kris McFadden and Marsi Steirer, August 31, 2011 (Exhibit 9.)

Creek.[22] That this cleanup might happen at the substantial expense of the City or be an effective double standard did not seem to matter. SDRWQCB staff stated that they "share the City's concern regarding total dissolved solids loading into Murphy Canyon Creek which is on the 303(d) list of TDS impaired water bodies."[23] The balance of the response letter's discussion of TDS thereafter mostly turned attention away from the Kinder Morgan discharge and put it on the City, suggesting that the elevated levels of TDS in Murphy Canyon Creek were the result of over-irrigation, and that the SDRWQCB was looking forward to the City's development and implementation of a salinity management plan to achieve the TDS objectives for the groundwater.[24]

If it is really true that all these other sources are a problem, as they well may be, the City is perplexed as to how the addition of Kinder Morgan's discharge at those same or similar levels can be justified as not a problem. The SDRWQCB response letter corrected the City in distinguishing effluent limits from receiving water limits[25], but this is a distinction without a difference where Section VI.A.8 of R9-2008-0002 prohibits groundwater effluent *separately* or *jointly* with any other discharge causing violations of the 1,500 mg/L receiving water limitation.

The SDRWQCB's response to the City Transportation and Storm Water Department stated that Time Schedule Orders are an enforcement mechanism prescribed by the CWC and that they are not required to contain interim effluent limits. The SDRWQCB further responded that it nevertheless was concerned about water quality standards in Murphy Canyon Creek and TDS, and that it did in fact take City's concerns into account in drafting the interim TDS effluent limit of 2,400 mg/L set forth in Finding 5 of the TSO. The response stated that "[w]ith the

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[22] Declaration of Kris McFadden, submitted herewith as supplemental evidence per CWC Section 13320 (b) and Cal. Code of Regs. 2950.6 (Exhibit 13). This supplemental evidence was not presented before hearing because it contains information well known to both the SDRWQCB and the State Board and the matters expressed therein were acted upon by the Water Boards themselves. The City requests that administrative notice be taken to the contents of the declaration.

[23] Letter from Ben Neill to Kris McFadden and Marsi Steirer, August 31, 2011 p. 1 (Exhibit 9).

[24] Id. at pp. 1-2, 4

[25] Id at p. 3

limited receiving water data that is available, existing levels of TDS upstream of the discharge have exceeded 2,400 mg/L on two of the three monitoring events."[26] In setting the TDS interim effluent limit, the Basin Plan's water quality objectives were not the measure used by the SDRWQCB, but instead best professional judgment using the statistical formula contained in Finding 6 of the TSO.

This consideration given to the City's concerns, such as it was, did not meet the City's point that the effluent limit should not be more that the receiving water limit, nor did it explain why a lower TDS effluent concentration could not be achieved forthwith by Kinder Morgan through use of available treatment technologies. The comment reply letter also brushed off the City's concerns about complying with its MS4 Permit by stating that Section B.1 of the permit excepts from the prohibitions cited by the City any discharges that are authorized by a separate NPDES permit, i.e. R9-2008-0002, and therefore the Kinder Morgan discharges to the creek do not violate the City's MS4 Permit.[27] Be that as it may, the comment response letter does not explain why the City should bear the burden of Kinder Morgan's cleanup by accepting the excessive TDS into this impaired water body that is part of the City MS4, nor does it explain why the condition of prior City approval as clearly provided in Section II.D of the R9-2008-0002 is not being enforced or why in fact it is unaddressed by the SDRWQCB in the TSO. Section II.D of the R9-2008-0002 provides:

> D. **Discharge to a Municipal Separate Storm Sewer System (MS4)**
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> Prior to discharging into an MS4, the Discharger shall demonstrate alternatives to discharging extracted groundwater waste into an MS4 and why it is technically or economically infeasible to implement these alternatives.
>
> *Without prior approval from the appropriate local agency with jurisdiction over the MS4, the discharger shall not discharge extracted groundwater waste under this WDR into an MS4..*
>
> Local agencies responsible for operating the MS4s may not passively receive and discharge pollutants from third parties. By providing free and open access to an MS4 that conveys discharges to waters of the U.S., the MS4 operator essentially

[26] Id. at p. 1

[27] Id. p. 3

> accepts responsibility for discharges into the MS4 that it does not prohibit or control. These discharges may cause or contribute to a condition of contamination or a violation of water quality standards.
>
> Therefore, at least 30 days prior to initiating an extracted groundwater discharge to an MS4, *the Discharger shall notify and receive authorization from the appropriate local agency with jurisdiction over the MS4.* This requirement encourages communication between Dischargers enrolled under this WDR and local agencies responsible for MS4s in an effort to reduce misunderstandings and concerns over the types of discharges covered by this WDR. (emphasis added)

This language is not in the City's permit, it is in Kinder Morgan's permit. No response was given to the City's comments on this important subject. Although the Kinder Morgan discharge is regulated under the R9-2008-0002 and per the SDRWQCB it is thus excepted from the discharge prohibitions in the MS4 Permit and does not amount to a violation of the MS4 Permit, the SDRWQCB has completely failed to address the fact that R9-2008-0002 seems to contain and echo the very same principles found in the MS4 Permit. Further, no guidance has been given to the City on how it is to differentiate the "approved" TDS originating from Kinder Morgan's discharges from "disapproved" TDS in other discharges and hence it is faced with a blatant double standard and control planning complexity it does not want.

<u>Testimony at the Hearing on September 14, 2011</u>

Again, due to the decision to postpone action on the flow increase request, while issues of water value and use were discussed, the effective scope of the hearing was limited the Tentative TSO as amended, and focus was on the interim effluent limits for TDS. Ben Neill gave the opening presentation for the SDRWQCB staff and in course reiterated the responses to the City's comments. He acknowledged that Murphy Canyon Creek near Qualcomm Stadium, the location of Kinder Morgan's discharge, rated a "very poor" grade for bioassessment, the lowest grade possible.[28] Nevertheless he testified that he does not expect this Kinder Morgan discharge (at up to 2,400 mg/L TDS) to alter existing habitat conditions because the TDS levels are comparable to existing discharge.[29] Whether this is so is questionable when total load (including rate and volume of discharge) is considered and not just concentrations in a liter, but it can't be

[28] Transcript, p. 9 /17-25. p..10 / 1-4 (Exhibit 12)

[29] Transcript, p. 11 / 3-6. (Exhibit 12)

questioned that the permitted concentration won't permit much improvement of water quality, as the SDRWQCB is insisting under law that the City plan to do.

Mr. Neill recounted the minimum mandatory penalties that Kinder Morgan was assessed in 2008 for violating effluent limits for other constituents,[30] and how Kinder Morgan was able to bring its discharge for those other constituents into compliance by using improved treatment.[31] But there is no effluent limit for TDS in the R9-2008-0002,[32] and given the current surface water conditions and objectives in Murphy Canyon Creek the SDRWQCB needed to establish one. Mr. Neill described the current state of the groundwater in the area as being around 2,400 mg/L which does not meet surface water standard of 1,500 mg/L in Murphy Canyon Creek. Hence the TSO, he testified, which will give Kinder Morgan until November 30, 2015 to bring its discharge into line with the 1,500 mg/L surface water objective.[33] He did not offer any explanation for why Kinder Morgan would be unable or could not be required to do so sooner, except to say "we need sufficient time to monitor and develop a treatment system and mitigation for – or some alternative to address the TDS."[34] Mr. Neill did not discuss availability of treatment technologies that could tackle this problem now, or one alternative long pressed by the City: The idea of putting the groundwater back in the ground instead of the creek.

Mr. Neill stated that "we have an interim limitation of 2,400 mg/L and we think it's reasonable considering the existing conditions in the watershed."[35] The statistical calculus for coming up with the 2,400 mg/L level is contained in Finding 6 of the TSO, and is based not on water quality objectives but on "best professional judgment."[36] The "interim effluent limits are

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[30] R9-2008-0046,18 Order of Minimum Mandatory Penalties for Effluent Limit Violations (Exhibit 18)

[31] Transcript p. 13 / 4-8. (Exhibit 12)

[32] TSO Section 4 (Exhibit 1)

[33] Transcript, 13 / 4-23. (Exhibit 12)

[34] Transcript 15 /15-21. (Exhibit 12)

[35] Transcript, 13 /24-25, 14 /1. (Exhibit 12)

[36] TSO, Section 6 and table, p. 3 (Exhibit 1)

based on the existing quality of the influent", i.e. statistical inferences from samples of the existing water quality.[37] The City understands that SDRWQCB's position may be that the "best professional judgment" standard is permissible where no effluent limit is prescribed otherwise for a given constituent, but no reason was given by the TSO as to why the water quality objectives of the receiving water did not even merit a mention in the professional judgment calculus of Finding 6. As Mr. Neill testified, this creek section where Kinder Morgan is discharging rates "very poor" – the lowest grade possible -- for bioassessment, so it is hard to figure why existing conditions should be the benchmark for this interim effluent limit, especially when coupled with a potential flow increase which would increase mass loading to potentially degrade existing conditions. Admittedly, the poor bioassessment grade is based on more inputs than TDS, but the water quality standard for TDS is substantially exceeded by use of that benchmark and it cannot help the "very poor" creek to be troubled by these extra loads of TDS. No reason was given for Kinder Morgan not to have to do better sooner.

Marsi Steier testified for the City water utility that the City owns the property around Qualcomm Stadium not because of the stadium but because it was a productive aquifer for City uses.[38] The SWRCB has heard this before from the City in the 2009 petition that it declined to act upon.[39] This time it is in the context of an alternative solution to the excessive TDS problem for surface water discharge. Barring that, if Kinder Morgan absolutely must be allowed to continue live stream discharge, both Ms. Steirer and Kris McFadden of the City's storm water section testified about the ready availability of technology which would permit Kinder Morgan to attain TDS surface water standards promptly.[40] The TSO, in using samples of the existing creek conditions, statistically calculating a standard deviation on those samples for variability, and using the result to define existing allowable interim effluent levels for TDS, completely ignores *immediate* use of these technologies to better meet water quality standards.

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[37] Id.

[38] Transcript, 21 /16-35. (Exhibit 12)

[39] Exhibit 17

[40] Transcript, p. 22/ 23-25, p. 23 / 1-2.

Mr. McFadden presented Power Point slides[41] which were admitted into the record and which summarized the previously filed comments regarding the nuisance and costs that added flow would bring, the high TDS interim effluent limits set by the Tentative TSO, and the lack of City consent for the discharge ever being requested or obtained by Kinder Morgan for this TSO, or for that matter, never even since the discharge began under Kinder Morgan's original enrollment (R9-2008-0002 Section II.D).

Importantly, Mr. McFadden's testimony[42] and projection slides added one more comment not previously made on the Tentative TSO, to wit, the failure of the TSO to comply with the anti-degradation policy of SWRCB Resolution 68-16 as contained in Section II.M of the R9-2008-0002. The anti-degradation provision of the R9-2008-0002 provides:

> Section 131.12 of 40 CFR requires that State water quality standards include an anti-degradation policy consistent with the federal policy. The State Board established California's anti-degradation policy in State Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal anti-degradation policy where the federal policy applies under federal law. *Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on **specific findings***. The Regional Boards' Basin Plans implement, and incorporate by reference, both state and federal anti-degradation policies. As discussed in detail in the Fact Sheet, the permitted discharges are consistent with the anti-degradation provision of 40 CFR section 131.12 and State Board Resolution No. 68-16. (italics added)

Mr. McFadden and the City were not alone in making this point about the TSO failing to meet requirements of antidegaradtion policy. Testimony from other interested parties at the hearing raised same or similar concerns. Rob Hutsel of the San Diego River Foundation and Gabriel Solmer of San Diego Coastkeeper, non-governmental organizations with deep, long-lasting, and sincere involvement with water quality issues in the watershed of the San Diego River to which Murphy Canyon Creek is immediately tributary, both gave testimony expressing

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[41] City slides shown at hearing on September 14, 2011 by Kris McFadden (Exhibit 15)

[42] Testimony of Kris McFadden, Transcript p. 31 /24-25, p. 32 /1-6

concern about the potential of the TDS levels authorized in the TSO to degrade the receiving water.

Mr. Hutsel testified to the Regional Board for the San Diego River Foundation: "Our concerns are largely focused on the impacts of the T.D.S. and in the future of any flow increase."[43] "As you know—I think many of you know the river is not natural downstream of here. It has drop structures, control structures, so we have ponded water. And so any impact on T.D.S., potentially, could *increase* the T.D.S. levels in those ponded areas in low flow conditions" (emphasis added).[44] Potential increase means potential degradation.

Ms. Solmer for Coastkeeper rightly pointed out the same issue raised early in this brief about the attempted disassociation by the SDRWQCB of the flow increase request from the setting of the TDS interim effluent limits. The two issues should go right together as a "holistic package" as Ms. Solmer testified, and their separation creates an artificial presumption that setting the TDS interim effluent limits for the groundwater discharge will not further degrade water quality of the receiving water *without having made any reference to volume or rate*, per the TSO as amended by the Errata Sheet. This presumption is artificial because if the flow increases, the mass loading will increase based on the interim effluent limits of the TSO. The separation of these issues should be rejected by the SWRCB. Ms Solmer testified:

> In this case, we do agree with many of the City's points that they articulated. And from my comments this morning, that's not just us carrying the water for the City. We can obviously disagree with them sometimes, but in this case, we do see the same concern with the increase in T.D.S. I had the same thought as Rob did when you see those very poor scores. *When staff says that we don't expect this to change habitat conditions, it also means it's not going to change them for the better, and that's not something we should be shooting for.* Frankly, I don't think that we're thinking big enough with this Time Schedule Order. I would like to see some sort of treatment so we're not using the river as our treatment in the creek. I think *we need that treatment and that mitigation now, rather than monitoring over the next few years to see what the effects are.* We know what the effects are, and we

[43] Testimony of Rob Hutsel, Transcript p. 39 /12-14

[44] Transcript, p. 40 /8-13

> know what elevated T.D.S. does to our downstream creeks, and I venture to say we know about the effects of adding more T.D.S. I would agree with the comments by the City *that we have an anti-degradation issue here and haven't heard much from the staff. So it would be interesting to hear a little bit more about what—the impacts there and how we do address that anti-degradation issue.* Also, I certainly understand that the flow rate will be agendized (sic) separately, or what we consider separately, but I think that's important because we do need a holistic package . . .And so *when we separate this out, and I understand it's been agendized that way, it doesn't give us that sense of the cohesive nature of the problem and the solution.* [45]

No specific factual findings were made by the SDRWQCB before the hearing was closed that the TDS levels authorized in the TSO would not further degrade receiving water quality. Appreciating that some sort of "finding" would be needed to bolster the record on this anti-degradation subject, counsel for the SDRWQCB, Ms. Newman, recommended to the Board, before the hearing was closed, but not articulated or stated in words until *after* the hearing was closed, that "[w]e should add a finding to, kind of, insert it, and make a new finding, number 8, with regrads to anti-degradation. So I can read that into the record at some point if you guys are considering adopting this."[46] After this advice the hearing was closed.[47] Then counsel for the SDRWQCB provided the words for the recommended Finding No. 8 in the adopted TSO: "The new finding would state: This order is consistent with Resolution 92-49 and Resolution 68-16. This TSO will not create further degradation to the environment. The water currently does not meet water quality standards for TDS, and the TSO will create a mechanism for treating the groundwater that is high in TDS and discharging it. That will lower the total TDS in the river and results – and *hopefully* in compliance with water quality standards.(emphasis added)"[48] The SDRWQCB thereupon moved to adopt the TSO as amended by both the Errata Sheet eliminating any regard to increased volume or rate of discharge and this new "Finding" No. 8, which was not

[45] Testimony of Gabriel Solmer for San Diego Coastkeeper, Transcript pp. 42-43.

[46] Transcript, p. 56 / 16-19.

[47] Transcript, p. 56 /20-21

[48] Transcript, p 56 /25, p. 57 /1-8 (emphasis added).

accompanied by any specific reference to evidence that there would be an assurance of no degradation of water quality.

II.

INFORMATION REQUIRED BY SECTION 2050

In support of this Petition, the City provides the following information, as required by Title 23, California Code of Regulations, § 2050:

A. Name, address, telephone number and email address of Petitioner. Petitioner is the City of San Diego, c/o Mr. Kris McFadden, Public Utilities Director, City of San Diego, 9370 Chesapeke Dr., San Diego, CA 92123. Phone: (858) 541-4320; e-mail Address: KMcFadden@sandiego.gov. All inquires and communication should be directed through Petitioner's counsel, Frederick M. Ortlieb, Deputy City Attorney, whose information is provided in the caption on this petition.

B. SDRWQCB's specific action or inaction for which review is sought.

1. The City seeks review of the SDRWQCB's adoption of the TSO R9-2011-0052 which would allow Kinder Morgan to discharge treated groundwater to Murphy Canyon Creek with TDS concentrations in excess of the receiving water standards for TDS in that water body until November 30, 2015.

2. The City seeks review of the SDRWQCB's failure to enforce Section II.D of Order R9-2008-0002 against Kinder Morgan

3. The City requests review of the separation by the SDRWQCB from the TSO of (a) the request by Kinder Morgan to increase flow under its enrollment in R9-2008-0002 to 1.26 million gallons per day, from (b) the issue of establishing an effluent for TDS in the groundwater discharge. The SDRWQCB's attempted disassociation of these issues through the Errata Sheet is inappropriate and the issues need to be decided together and comprehensively by the SDRWQCB to protect water quality.

4. The City seeks review of the factural basis for Finding No. 8 of R9-2011-0052.

C. The date on which the Regional Board acted or refused to act.

The date the SDRWQCB acted on the TSO was September 14, 2011. The date that the SDRWQCB failed to act on Section II.D of R9-2008-0002 was also on September 14, 2011 and previously throughout Kinder Morgan's enrollment in that Order.

D. Statement of reasons why the action was inappropriate or improper.

The action was improper for several reasons. First, the SDRWCB has ignored Section II.D in the R9-2008-0002 and has not given any reason why the SDRWCB is failing to enforce the conditions. Despite clear language in the R9-2008-0002 prohibiting discharge to an MS4 without prior approval of the local agency with jurisdiction over the MS4 (i.e. the City), the SDRWQCB has not only failed to enforce this against Kinder Morgan but has ignored the City's objections. The TSO is an action ostensibly permitting Kinder Morgan to discharge TDS in concentrations well above the receiving water limits in the MS4 and the City has rightfully objected and has not approved. The TSO also improperly attempted to disassociate the issue of the flow increase request (through the Errata Sheet issued before the hearing) from the establishment of a TDS effluent limit for the groundwater discharge. These issues are highly connected for purposes of water quality protection and their separation was improper. The action was also improper because there were no sufficient factual findings to support Finding No. 8 of the TSO.

E. The manner in which Petitioner is aggrieved.

The City is aggrieved by the TSO because the SDWQCB is permitting the Kinder Morgan to cause or threaten cause a condition of pollution or nuisance in Murphy Canyon Creek by discharging excessive levels of TDS at a time when the creek's beneficial uses are already impaired by TDS and where the creek is part of the MS4 and water quality limited. The City does not want these pollutants in its MS4 but the SDRWQCB seeks to allow it over City objections. The pollutants exceed water quality objectives and are a nuisance to the City. The City has not given its approval for these discharges and the SDRWQB has (a) improperly acted in the TSO by granting Kinder Morgan the right to discharge the illegally high levels of TDS to Murphy Canyon Creek, which is contrary to water quality objectives and anti-degradation policy; (b) failed to enforce condition II.D of the Groundwater Permit against Kinder Morgan;

(c) improperly separated consideration of Kinder Morgan's flow increase request from the TSO so that mass loading of TDS in the creek is not considered in the establishment of discharge effluent limits; and (d) failed to make sufficient findings to support its conclusion that water quality will not be degraded by the groundwater effluent limits for TDS.

F. Specific action by the State requested by the Petitioner.

Petitioner requests that State:

1. Vacate TSO R9-2011-0052 and remand the matter back to the SDRWQCB for rehearing pursuant to CWC Section 13320(c).
2. Order the SDRWQCB to enforce Section II.D of the Groundwater Permit against Kinder Morgan which prohibits the discharge of groundwater to an MS4 without the prior approval of the MS4 operator.
3. Order that the associated issues of (a) Kinder Morgan's request to increase discharge up to 1.26 million gallons per day and (b) the setting of TDS effluent limits for the groundwater discharge be rejoined for purposes of the TSO rehearing and decided comprehensively by the SDRWQCB itself, and that neither of those issues be decided independently by its Executive Officer.
4. Order the SDRWQB to require Kinder Morgan to demonstrate to the reasonable satisfaction of the MS4 owner that alternatives to groundwater discharges to the MS4 which have concentrations of TDS above the Basin Plan standard for Murphy Canyon Creek. This demonstration must include (1) an analysis of why it is technically or economically infeasible to re-inject the groundwater to the aquifer; and if that is shown, then (2) why it is technically or economically infeasible to more promptly treat the groundwater to TDS levels that do not exceed the water quality objectives of the receiving water; and (3) identify locations alternative to Murphy Canyon Creek for the discharge.
5. Order the SDRWQCB to require Kinder Morgan to perform an anti-degradation analysis if it is not technically or economically feasible to reinject the groundwater into the aquifer or to treat it so that it does not exceed Basin Plan Standards

G. Statement of points and authorities in support of legal issues raised in the Petition.

The City's statement of Points and Authorities follows this list of the nine categories of information required by 23 California Code of Regulations Section 2050 and is incorporated herein by reference.

H. Statement that Petition has been sent to the Regional Board and discharger.

The City Certifies that a true and correct copy of this Petition was mailed on (date) to the SDRWQCB and to the discharger, Kinder Morgan at the following addresses:

Mr. David Gibson
Executive Director
Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
SanDiego,CA 92123

Kinder Morgan Energy Partners
c/o Mr. Scott Martin
Manager, EHS-Remediation
Kinder Morgan Energy Partners
1100 Town & Country Road
Orange, CA 92868

I. The substantive issues raised in the Petition were raised before the SDRWQCB.

All of the issues raised in this petition were raised by Petitioner before the SDRWQCB. The City wrote two letters dated July 26, 2011 and July 27, 2011 commenting on the tentative TSO before it was heard and adopted (one letter from City's Public Utilities Water Department[49] and one from its Transportation and Storm Water Department[50]). These letters raised almost all of the substantive issues in this petition. The two issues not raised in those letters but which were raised by the City at the September 14, 2011 hearing were (1) the City's contention that the SDRWQCB had not made sufficient findings relative to anti-degradation policy (State Board Resolution No. 68-16) in the Tentative TSO; and (2) the City's contention that the separation of the flow increase request from the TSO was improper and that the issue of increased flow should

[49] Exhibit 8a

[50] Exhibit 8b

be decided by the SDRWQCB itself with the TSO and not by the Executive Officer .[51] On the issue of the separation of the flow increase request from the TSO, the City was not presented with the undated Errata Sheet making this change until the day of the hearing, though was advised orally by the Executive Officer it was impending the day before. City representatives Marsi Steirer and Kris McFadden, respectively for the Public Utilities Water Department and the Transportation and Storm Water Department, testified[52] at the hearing on September 14, 2011 and together through their comment letters, testimony, and Power Point slides raised all of the issues presented in this petition. The City also reserves the right to present at the hearing additional evidence in support of this petition in accordance with Cal. Code of Regs.Section 2050.6.

III.

STATEMENT OF POINTS & AUTHORITIES IN SUPPORT OF LEGAL ISSUES

A. The SDRWQCB Has a Legal Mandate to Establish Groundwater Discharge Effluent Limits That Are Consistent With Water Quality Objectives and Protective of Beneficial Uses Notwithstanding Existing Conditions in the Receiving Water.

The Clean Water Act places "primary reliance for developing water quality standards on the states." *Scott v. City of Hammond*, 741 F.2d 992, 994 (7th Cir. 1984). This is accomplished primarily through National Pollutant Discharge Elimination System (NPDES) permitting program. When the NPDES system fails to adequately clean up certain rivers, streams or smaller water segments, the Clean Water Act requires use of a water-quality based approach. States are required to identify such waters and rank them "in order of priority, and based on that ranking, calculate levels of permissible pollution called 'total maximum daily loads' or 'TMDLs.' " *San*

[51] Testimony of Kris McFadden, Transcript p.34 /23-25, p. 35 / 1-13

[52] Transcript, pp. 20-38 Exhibit 12

Francisco BayKeeper v. Whitman,, 297 F.3d 877, 880 (9th Cir. 2002); 33 U.S.C. § 1313(d)(1)(A). This list of substandard waters is known as the '303(d) list' in reference to that Section of the Act. *City of Arcadia v. EPA*, 411 F.3d 1103, 1105 (*City of Arcadia II*). A TMDL defines the specified maximum amount of a pollutant which can be discharged or 'loaded' into the waters at issue from all combined sources." *Dioxin/Organochlorine Center v. Clarke*, 57 F.3d 1517, 1520 (9th Cir. 1995). "A TMDL must be 'established at a level necessary to implement the applicable water quality standards.' A TMDL assigns a *waste load allocation* (WLA) to each point source, which is that portion of the TMDL's total pollutant load, which is allocated to a point source for which an NPDES permit is required. Once a TMDL is developed, effluent limitations in NPDES permits must be consistent with the WLA in the TMDL." *Communities for a Better Environment v. State Water Resources Control Bd.*, 109 Cal.App.4th 1089, 1095-1096 (2003)(citations omitted).

The City has been ordered to comply with a TMDL for TDS in Murphy Canyon Creek, a tributary to the San Diego River. On February 10, 2010, the California Regional Water Quality Control Board, San Diego Region adopted Resolution R9-2010-0001, a resolution amending the Water Quality Control Plan for the San Diego Basin (9) to incorporate revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek). This was accompanied by a requirement for a Comprehensive Load Reduction Plan which is due to the SDRWQCB on or before October 4, 2012. The Comprehensive Load Reduction Plan must include a program for control of the constituent TDS. This TMDL was subsequently approved by the SWRWCB on August 4, 2010 in the 2010 Integrated Report on impaired waters and subsequently by the United States EPA.[53]

It is unjustifiable for the SDRWQCB to place this requirement on the City for a Comprehensive Load Reduction Plan and a TMDL which includes a TDS receiving water limit of 1,500 mg/L while at the same time arguing to justify the live stream discharge of massive amounts of treated groundwater generated from Kinder Morgan's pollution release cleanup

[53] Declaration of Kris McFadden, Exhibit 13

operation which contain 2,400 mg/L TDS levels. It is completely antithetical to the Comprehensive Load Reduction Plan which has been ordered. It is unjustifiable at the already permitted 795,000 gallon per day rate, and will be even more so were the SDRWQCB to grant Kinder Morgan's request to discharge up to 1.26 million gallons per day. The City has heard the arguments from SDRWQCB staff[54] and Kinder Morgan consultants[55] that these levels of TDS are the norm for groundwater in this aquifer, and that this groundwater migrates to the river. That the groundwater may be naturally high in TDS is a well and good explanation, but the City has been given no relief from the surface water TMDL, and Kinder Morgan is discharging the treated groundwater to the surface. Mr. Bob Morris testified for the SDRWQCB that the surface water Basin Plan standard of 1,500 mg/L for TDS in Mission Valley was originally set in 1975, and implied that it is outdated because it is based on an assumption of beneficial uses of drinking water uses which no longer apply.[56] He testified that in 1985-86 the groundwater standards were relaxed to 3,000 mg/L. The surface water standards were not similarly relaxed, however, and with regard to this constituent TDS, the City is on an order as a result. If the implication made by Mr Morris's testimony is that the 1,500 mg/L for surface water is outdated because the basin really isn't used for drinking water anymore, and therefore Kinder Morgan should be allowed to exceed it with its cleanup groundwater discharge, then the City would have expected the SDRWQCB to have presented a proposed revision to the Basin Plan to the SWRCB and the EPA for the 2010 Integrated Report similarly relaxing that standard for TDS in surface waters of the Lower San Diego River. Of course that did not occur; the water quality standard is still 1,500 mg/L for TDS in surface water. This is the TMDL, and it is why the TSO is wrong. All the monitoring Kinder Morgan could possibly perform is not going to alter this reality, so the contention that four years are needed to gather data is just an excuse and an avoidance.

[54] Testimony of Bob Morris for SDRWQCB, Transcript pp. 46-47 Exhibit 12

[55] Testimony of Eric Nichols, Arcadis for Kinder Morgan, Transcript pp. 55-56 Exhibit 12

[56] Testimony of Bob Morris, Transcript pp. 46-48

The CWA defines an effluent limitation as "any restriction established by a State or the [EPA] Administrator on *quantities, rates, and concentrations* of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance." (33 U.S.C. § 1362(11). *Trustees for Alaska v. E.P.A.,* 749 F.2d 549, 557 (9th Cir. 1984) (emphasis added). A "point source" is defined as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). "Effluent limitations are a means of *achieving* water quality standards.," *Trustees for Alaska*, 749 F.2d at 557; *Communities for a Better Environment v. State Water Resources Control Bd.*, 109 Cal.App.4th 1089, 1093 (2003). They are not a means of deferring achievement of water quality standards while monitoring occurs to determine TDS concentration variables in the water course.

In the CWA, Congress "supplemented the 'technology-based' effluent limitations with 'water quality-based' limitations 'so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.' " *National Wildlife Fed. v. U.S. Army Corps*, 92 F.Supp.2d 1072, 1075 (D.Ore. 2000), (quoting *EPA v. California ex rel. Water Resources Control Bd.*, 426 U.S. 200, 205 n. 12. (1976)). The CWA makes WQBELs applicable to a given polluter whenever WQBELs are "necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations . . . ." 33 U.S.C.§ 1311(b)(1)(C); 40 C.F.R. § 122.44(d)(1) (2002). Generally, NPDES permits must conform to state water quality laws insofar as the state laws impose more stringent pollution controls than the CWA. 33 U.S.C. § 1370; see CWC, Sections 13263(a), 13372. Simply put, WQBELs implement water quality standards.

In California, water quality standards are established through regional water quality control plans, known as Basin Plans, which are approved by the State Board. *WaterKeepers*

Northern California v. State Water Resources Control Bd, 102 Cal.App.4th 1448, 1451-1452 (2002). The Basin Plans, which designate the beneficial uses to be protected, water quality objectives and a program to meet the objectives. CWC Sections 13050, subd. (j), 13240. 'Water quality objectives' means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." *Id.* As recognized in the TSO, the current Basin Plan water quality objective for TDS in Murphy Canyon Creek is 1,500 mg/L.

R-2008-0002 Section II.H Requires Establishment of Water Quality Based Effluent Limitations (WQBELs):

> Permits shall include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. (40 CFR Section 122.44(d)). Where numeric water quality criteria have not been established, WQBELs may be established using 304(a) criteria guidance, proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter. 40 CFR Section 122.44(d).

Permits must contain any more stringent limitations for particular pollutants that are necessary to attain and maintain water quality standards for those pollutants. Section 301(b)(1)(C), 33 U.S.C. § 1311(b)(1)(C)

B. <u>A Water Quality-Based Effluent Limitation for a Pollutant Must be Consistent With Any "Total Maximum Daily Load" Developed for That Pollutant and Receiving Water</u>

40 C.F.R. § 122.44 provides:

> In addition to the conditions established under Section 122.43(a), each NPDES permit *shall include conditions meeting the following requirements* when applicable.
>
> ....

> (d) *Water quality standards* and State requirements: *any requirements* in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA *necessary to*:
>
> (1) *Achieve water quality standards established under section 303 of the CWA*, including State narrative criteria for water quality.
>
> ....
>
> (vii) *When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that*:
>
> ....
>
> (B) *Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both*, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7 (emphasis added)

The TSO failed to comply with applicable federal pollution control laws because it failed to set a "water quality based effluent limit" (WQBEL) for TDS. Finding 6 of the TSO states "[t]he compliance time schedule in this Order includes an interim effluent limitation for TDS based upon the quality of influent." The interim effluent limit was not based on the established numeric criterion for water quality. Best professional judgment is not the mechanism for establishing this effluent limit, the numeric water quality criterion are. Insofar as the SDRWQCB may maintain that best professional judgment is permissible under 40 CFR 122.44 to establish this limit, the City maintains that completely ignoring the water quality objective in exercise of that judgment is an abuse of discretion. The interim effluent limit established by the TSO fails to meet the test that the discharge shall not cause, or contribute to an in-stream excursion above any applicable criterion promulgated by USEPA pursuant to section 303 of the l Clean Water Act or water quality objectives established by the State.

C. <u>The Separation of the Flow Increase Request From the Setting of the TDS Interim Effluent Limit Was Improper</u>

As stated above, The CWA defines an effluent limitation as "any restriction established by a State or the [EPA] Administrator on *quantities, rates, and concentrations* of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance." 33 U.S.C. § 1362(11) (emphasis added). The separation of Kinder Morgan's request to increase the discharge rate to 1.26 million gallons per day from the setting of the TDS interim effluent limit was improper because it failed to take rates and quantities into consideration. As a result the potential mass loading was not figured, only the concentrations. Language in the Errata Sheet and inserted in the final adopted TSO Finding 1 that "[t]he August 24, 2010, (flow increase) request will be addressed through a separate action and any subsequent approved increase in flow must comply with the terms of this Order" clearly indicates that the added flow the SDRWQCB is poised to allow through a separate action will also be subject to these effluent limits. The impact of this added rate and quantity was improperly separated from the effluent limit consideration. As Ms. Solmer for Coastkeeper testified, "a more holistic" approach is warranted and the request for of flow increase and the issue of effluent limits should be ordered rejoined for rehearing on remand to the SDRWQCB.

D. <u>The SDWRCB Failed to Make Sufficient Factual Findings to Support Its Conclusion That the Interim Effluent Limits for TDS Will Not Violate Anti-Degradation Policy</u>

As discussed above at pages 15-16, the SDRWQCB made a last minute finding on anti-degradation policy Resolution 68-16 and Resolution 68-16. This finding was made after the record was closed and is now included as Finding 8 of the adopted TSO:

> 8. This Order is consistent with State Water Board Resolution Nos. 92-49 and 68-16. This TSO will not cause further degradation of the environment. The water currently does not meet the standards for TDS, and the TSO will create a mechanism for Kinder Morgan to treat groundwater naturally high in TDS and discharge the treated water, which will lower the total TDS in the river andbring the water into compliance with Water Quality Standards.

Other than the testimony from City (Mr. McFadden) and Coastkeeper (Ms. Solmer) representatives at the hearing, both of whose testimony was directly opposite this finding, the SDRWQCB offered no factual references for the basis of this last minute finding. If this case were to be reviewed by the Superior Court pursuant to a Petition for Writ of Mandate under Cal. Code of Civil Procedure Section 1094.5 would apply. The California Supreme Court has held: "Section 1094.5 clearly contemplates that at a minimum, the reviewing court must determine both whether substantial evidence supports the administrative agency's findings and whether the findings support the agency's decisions." *Topanga Assn. for a Scenic Community v. County of Los Angeles,* 11 Cal. 3d 506, 514-515 (1974). "We further conclude that implicit in Section 1094.5 is a requirement that the agency which renders the challenged decision must set forth findings to bridge the analytic gap between the raw evidence and ultimate decision or order." *Id.* at 515. With respect to the Finding No. 8 the City and others who may wish to challenge its conclusion are completely in the dark about what evidence exactly is in the record to support it. Indeed, from the City's point of view Finding 8 is without basis, but it can't really know because no findings or references to specific facts were offered by the SDRWQCB in support of it. This Finding No. 8 fails the *Topanga* test for lack of an articulated and substantial factual basis, and for this reason the TSO must be remanded.

E. <u>Conclusion.</u>

The TSO was improper as it set effluent limits in disregard of Basin Plan water quality standards. It will cause or contribute to a condition of pollution or nuisance. It is unfair to the City at a time when the City is attempting to control TDS discharges to Murphy Canyon Creek due to a TMDL order from the very SDRWQCB which is authorizing this TSO for Kinder Morgan. With the TSO and for all prior periods of Kinder Morgan's enrollment he SDRWQCB has completely failed to enforce Section II.D of R9-2008-0008. The TSO improperly disjoined the subject of Kinder Morgan's request to substantially increase discharge rate. The SDRWQCB failed to offer any support for its conclusion that the TSO will not degrade waters. R9-2011-0052

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was on improper on many levels, and it should be immediately vacated by the State Board and remanded to the SDRWQCB with instructions for rehearing as requested herein.

Dated: October 13, 2011

JAN I. GOLDSMITH, City Attorney

By Frederick M. Ortlieb

Frederick M. Ortlieb
Deputy City Attorney

EXHIBIT 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

TIME SCHEDULE ORDER NO. R9-2011-0052

AN ORDER PRESCRIBING A TIME SCHEDULE FOR THE KINDER MORGAN ENERGY PARTNERS TO COMPLY WITH DISCHARGE PROHIBITION NO. IV.C OF ORDER NO. R9-2008-0002 (NPDES PERMIT No. CAG919002) FOR ITS MISSION VALLEY TERMINAL REMEDIATION DEWATERING DISCHARGE TO MURPHY CANYON CREEK

The California Regional Water Quality Control Board, San Diego Region (hereinafter San Diego Water Board) finds that:

1. **SFPP, L.P. operating partnership of Kinder Morgan Energy Partners, L.P. (hereinafter Kinder Morgan or Discharger)** discharges up to 795,000 gallons per day of treated groundwater to the San Diego River via Murphy Canyon Creek (Mission San Diego Hydrologic Area, 907.11) pursuant to waste discharge requirements prescribed in Order No. R9-2008-0002 (NPDES No. CAG919002). On August 24, 2010, Kinder Morgan requested the San Diego Water Board increase the allowable discharge rate to 1.26 million gallons per day (mgd). The August 24, 2010, request will be addressed through a separate action and any subsequent approved increase in flow must comply with the terms of this Order.

2. Kinder Morgan is discharging treated groundwater generated by a project to cleanup soil and groundwater contamination downgradient of the Mission Valley Terminal Aboveground Fuel Tank Farm, located at 9950 and 9966 San Diego Mission Road, San Diego, CA. The cleanup is being conducted in accordance with San Diego Water Board Order No. 92-01, which prescribes a deadline of December 31, 2013 for the cleanup and abatement of petroleum hydrocarbons and associated compounds at the site. The increase in the discharge flow rate discussed in Finding No. 1 will enhance the prospect of Kinder Morgan achieving this deadline.

3. Order No. R9-2008-0002 establishes effluent limitations for 17 general constituents, 126 priority pollutants including metals, and 9 other volatile/metal constituents. No documented violations of the effluent limitations have occurred since January 2009 when Kinder Morgan began full operation of the current treatment system.

4. Order No. R9-2008-0002 neither specifies an effluent limitation nor requires monitoring of the discharge for Total Dissolved Solids (TDS). Based upon the following facts, however, the discharge of groundwater as discussed in the above Finding No. 2 has a reasonable potential to contribute to an in-stream excursion above water quality objectives (WQO) for Total Dissolved Solids (TDS) established in the Water Quality Control Plan for the San Diego Basin (Basin Plan) which would be in violation of Discharge Prohibition IV.C and

Receiving Water Limitation VI.A.8.

a. The Basin Plan states, "*Inland surface waters shall not contain total dissolved solids in concentrations in excess of the numerical objectives described in Table 3-2.*"

Table 3-2 excerpt:

Hydrologic Unit	***Constituent (mg/L) - TDS***
Mission San Diego (907.11)	1,500

b. Prohibition IV.C of Order No. R9-2008-0002 states, "*The discharge shall not cause, or contribute to an in-stream excursion above any applicable criterion promulgated by USEPA pursuant to section 303 of the (federal Clean Water Act) or water quality objectives established by the State or Regional Boards.*"

c. Receiving Water Limitations VI.A.8. of Order No. R9-2008-0002 states, "*Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this WDR. The discharge of groundwater extraction waste from any site shall not, separately or jointly with any other discharge, cause violations of the following water quality objectives. These limitations apply unless more stringent provisions exist in either the Basin Plan, or an applicable State plan. ... 8. Mineral Objectives for Inland Surface Waters (fresh): San Diego Hydrographic Unit 7.11, Objective (mg/L) TDS – 1500.*"

d. Kinder Morgan has reported that the treated groundwater is high in total TDS concentrations (typically over 2000 milligrams per liter [mg/L]). Kinder Morgan further reported that the various treatment processes (oil/water separation, particulate filtration, manganese and iron removal, carbon absorption, denitrification, and oxygenation do not result in significant changes in the overall TDS of the treated groundwater.

e. Murphy Canyon Creek has limited, if any, assimilative capacity for additional TDS loading. Murphy Canyon Creek is on the Clean Water Act §303(d) list of water quality limited waterbodies for TDS. In addition, sampling conducted in November 2010 within Murphy Canyon Creek both upstream and downstream of the Mission Valley Terminals discharge point detected TDS concentrations in excess of the Basin Plan WQO.

Table 1: TDS Concentrations (mg/L) in Murphy Canyon Creek

Date:	***907MCC2US (upstream)***	***907MCC1US (upstream)***	***907MCC1DS (downstream)***	***907MCC2DS (downstream)***
11/10/10	2,227	2,321	2,187	2,195
11/16/10		2,665	2,504	2,326
11/18/10		2,480	2,256	2,163

5. The Basin Plan lists the following beneficial uses for Murphy Canyon Creek: agricultural supply, industrial process supply, contact water recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat, and rare, threatened, or endangered species. Murphy Canyon Creek is excepted from the municipal drinking water supply beneficial use.

6. The compliance time schedule in this Order includes an interim effluent limitation for TDS based upon the quality of influent. In developing the interim limitation, best professional judgment was applied. When there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9 percent of the data points will lie within 3.3 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row, 3rd Edition, January 1986). Where actual sampling shows an exceedance of the proposed 3.3 standard deviation limit, the maximum detected concentration has been established as the interim limitation. If the statistically projected interim limitation is less than the maximum observed effluent concentration, the interim limitation is established as the maximum observed concentration. The following table summarizes the calculation of the interim effluent limitation for TDS:

Table 2. Interim Limitation Calculation Summary

Parameter	**Units**	**MEC**	**Mean**	**Standard Deviation**	**Number of Samples**	**Interim Limitation (Maximum Daily)**
Total Dissolved Solids	mg/L	2,300	2,071	95.6	38	2,400

The compliance time schedule in this Order is as short as reasonably possible and is intended to result in full compliance with Prohibition IV.C [and Receiving Water Limitations VI.A.8.] of Order No. R9-2008-0002 as it applies to TDS not later than November 30, 2015.

7. This Order is issued in accordance with California Water Code (CWC) section 13300, which states: "*Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements.*"

8. This Order is consistent with State Water Board Resolution Nos. 92-49 and 68-16. This TSO will not cause further degradation of the environment. The water currently does not meet the standards for TDS, and the TSO will create a mechanism for Kinder Morgan to treat groundwater naturally high in TDS and discharge the treated water, which will lower the total TDS in the river and bring the water into compliance with Water Quality Standards.

9. Pursuant to CWC section 13267(b), the San Diego Water Board may require the discharger to furnish, under penalty of perjury, technical or monitoring program reports. Monitoring reports and other technical reports are necessary to determine compliance with the NPDES permit and with this Order.

10. This enforcement action is being taken for the protection of the environment and is exempt from the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.) in accordance with section 15308, chapter 3, Title 14 of the California Code of Regulations. The issuance of this Order is also an enforcement action taken by a regulatory agency and is exempt from the provisions of CEQA pursuant to section 15321 (a)(2), Chapter 3, Title 14 of the California Code of Regulations. Finally, issuance of this Order is exempt from the provisions of CEQA because the Order does not constitute approval of a project.

11. Any person adversely affected by this action of the San Diego Water Board may petition the State Water Resources Control Board (State Water Board) to review the action. The petition must be received by the State Water Board within 30 days of the date on which the action was taken. Copies of the law and regulations applicable to filing petitions will be provided on request.

IT IS HEREBY ORDERED THAT pursuant to CWC sections 13300 and 13267 that Kinder Morgan Energy Partners (Discharger) shall comply with the following time schedule to ensure that the discharge does not cause, have a reasonable potential to cause, or contribute to an in-stream excursion above the Basin Plan's Water Quality Objective for TDS as required by Order No. R9-2008-0002, Discharge Prohibition IV.C and Receiving Water Limitations VI.A.8:

Table 3. Compliance Schedule

Task	Compliance Date
Initiate monitoring as described in Directive No. 2 below.	September 5, 2011
Submit and implement a plan for additional receiving water monitoring that incorporates the provisions described in Directive No. 3 below and any other monitoring measures necessary to assess the compliance of the discharge with Discharge Prohibition IV.C and the impact of the discharge on the downstream beneficial uses.	November 30, 2011
Submit technical report summarizing the results of the study to evaluate the potential for discharge to cause, or contribute to an in-stream excursion above the Basin Plan's Water Quality Objective for TDS as required by Order No. R9-2008-0002, Discharge Prohibition IV.C and Receiving Water Limitations VI.A.8.	June 28, 2013
Submit a workplan that provides a detailed schedule of specific actions and options, including at least one option for additional treatment of the discharge, that Kinder Morgan will take to address compliance with Discharge Prohibition IV.C Order for TDS concentrations in the discharge.	September 30, 2013
Complete feasibility studies for selection of treatment options.	March 31, 2014
Complete preliminary design of the appropriate treatment option.	June 30, 2014
Develop, implement and submit to the San Diego Water Board, a mitigation plan to compensate for TDS loading by the effluent discharge in excess of the Basin Plan's WQO within the San Diego River watershed.	June 30, 2014
Complete final design and select contractor for construction of treatment system.	January 30, 2015

Begin construction of selected treatment option, if other options, which were identified in workplan and pursued by the Discharger are ineffective in demonstrating compliance with Discharge Prohibition IV.C.	April 30, 2015
Complete construction.	September 30, 2015
Achieve full compliance with Discharge Prohibition IV.C	November 30, 2015

1. Progress reports shall be submitted semiannually and as otherwise required according to the time schedule and shall continue until compliance is achieved.

2. In addition to constituents in the discharge already being analyzed for compliance with Order No. R9-2008-0002, the Discharger shall also analyze a monthly grab sample of influent and effluent for TDS. The Discharger shall also include a grab sample of TDS with the monthly upstream receiving water monitoring conducted for Order No. R9-2008-0002.

3. In addition to the Monitoring and Reporting Program requirements specified in the June 23, 2009 enrollment and in Order No. R9-2008-0002, the Discharger shall develop and implement a monitoring plan for Murphy Canyon Creek and the San Diego River at various predetermined points during the increased discharge flow rate to observe any effects that the flows are having on the chemical, physical and biological environment in the receiving waters (Receiving Water Limitations; Water Quality Objectives; and Beneficial Uses). The discharger shall review and consider any additional surface water monitoring data that was conducted by other regulated parties within the sub-watershed.

   a) Additional monitoring points shall include at a minimum the following:

      i. Point #1: At the point where Murphy Canyon Creek discharges in to the San Diego River;
      ii. Point #2: 100 feet downstream of Point #1 within the San Diego River;
      iii. Point #3: 500 feet downstream of Point #2 within the San Diego River.
      iv. Alternative locations may be proposed by the discharger based on the safety and accessibility of locations.

b) The Discharger shall make the following observations and measurements at each point identified in Directive 3.a above and any additional points identified in the monitoring plan at a minimum frequency of every two weeks during the first quarter of monitoring. If monitoring during the first quarter demonstrates insignificant variability, then the monitoring may be reduced to monthly concurrently with the effluent sampling in directive 2:

   i. Visual observation of the receiving water for color, turbidity plumes, erosion, and sedimentation;
   ii. pH;
   iii. Temperature;
   iv. Dissolved Oxygen and
   v. TDS. Conductivity may alternatively be measured with sufficient data demonstrating the correlation between conductivity and laboratory TDS measurements.

c) The Discharger shall conduct upstream (reference) and downstream bioassessment monitoring to assess the condition of biological communities in the receiving waters:

   i. Locations: The discharger shall choose the locations as suitable to conduct the bioassessment. Where possible the bioassessment monitoring should be collocated with the receiving waters monitoring. The locations must have year round flow.
   ii. Frequency: Bioassessment stations must be monitored twice a year in May or June and in September or October.
   iii. Parameters/Methods: The bioassessment analysis procedures must include calculation of the Index of Biotic Integrity (IBI) for benthic macroinvertebrates for all bioassessment stations, as outlined in "A Quantitative Tool for Assessing the Integrity of Southern Coastal California Streams," by Ode, et al. 2005. If bioassessment monitoring cannot be collocated with the receiving waters monitoring, then the Discharger must also measure the constituents in Task 2.b at the bioassessment station. The discharger must conduct, concurrently with all required macroinvertebrate collections, the "full" suite of physical/habitat characterization measurements specified in the SWAMP Bioassessment SOP.
   iv. Monitoring of bioassessment stations must be conducted according to bioassessment procedures developed by the Surface Water Ambient Monitoring Program (SWAMP), as amended.
   v. A qualified professional environmental laboratory must perform all laboratory, quality assurance, and analytical procedures.

vi. An appropriately experienced and trained professional must perform all sampling.

4. The following interim effluent limitation for concentration of TDS in the discharge shall be effective until November 30, 2015 or when the Discharger achieves compliance with Order No. R9-2008-0002, Discharge Prohibition IV.C and Receiving Water Limitation VI.A.8, whichever is earlier:

Table 4: *Interim Effluent Limitation for TDS*

Parameter	Interim Average Monthly Effluent Limitation (AMEL)
TDS	The concentration in the discharge from the treatment process to Murphy Canyon Creek shall not exceed an average monthly concentration of 2,400 mg/L.

5. If noncompliance with the interim effluent limitation is confirmed through Tasks 1 through 3 above, within 24 months of the adoption of this Order, the Discharger shall develop, implement, and submit to the San Diego Water Board, a Pollution Prevention Plan (PPP) pursuant to CWC Section 13263.3 for TDS.

6. Failure to comply with requirements of this Order may subject the Dischargers to enforcement action, including but not limited to administrative enforcement orders requiring you to cease and desist from violations, imposition of administrative civil liability, pursuant to Water Code sections 13350, in an amount not to exceed $5,000 for each day in which the violation occurs referral to the State Attorney General for injunctive relief and referral to the District Attorney for criminal prosecution.

7. As required by the California Business and Professions code Sections 6734, 7835, and 7835.1, all technical reports required herein shall be prepared by, or under the supervision of, a California Registered Engineer or Registered Geologist (as applicable) and shall be signed by the registered professional.

8. Any person signing a document submitted under this Order shall make the following certification:

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there

are significant penalties for submitting false information, including the possibility of fine and imprisonment."

I, David Gibson, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on September 14, 2011.

DAVID W. GIBSON
Executive Officer

EXHIBIT 2

State of California
Regional Water Quality Control Board
San Diego Region

EXECUTIVE OFFICER SUMMARY REPORT
September 14, 2011

ITEM: 7

SUBJECT: Time Schedule Order: Kinder Morgan Energy Partners, Mission Valley Terminal Remediation Dewatering Discharge Project: The San Diego Water Board will consider adoption of a Time Schedule Order for Kinder Morgan Energy Partners to ensure that the discharge from the dewatering project does not cause, have a reasonable potential to cause, or contribute to an in-stream excursion above the water quality objective for Total Dissolved Solids as required by Discharge Prohibition No. IV.C of Order No. R9-2008-0002 (NPDES Permit No. CAG919002). (Tentative Order No. R9-2011-0052) (Ben Neill)

PURPOSE: To adopt Tentative Order No. R9-2011-0052 (Tentative Order).

PUBLIC NOTICE: A public notice of the Tentative Order was posted in the San Diego Union Tribune on June 27, 2011. Copies of the Tentative Order were e-mailed to Kinder Morgan Energy Partners and to all known interested parties and agencies on June 27, 2011. Also on June 27, 2011 copies of the Tentative Order were posted on the San Diego Water Board's website.

DISCUSSION: Kinder Morgan Energy Partners (Kinder Morgan) is remediating soil and groundwater contamination at its Mission Valley Terminal facility (see Vicinity Map in Supporting Document No. 1) using vapor and groundwater extraction and treatment methods. The groundwater treatment system currently discharges 795,000 gallons per day of effluent to Murphy Canyon Creek. This discharge is regulated under Order No. R9-2008-0002 (NPDES No. CAG919002), *General Waste Discharge Requirements For Discharges From Groundwater Extraction And Similar Discharges To Surface Waters Within The San Diego Region Except For San Diego Bay.*

Kinder Morgan has reported that the groundwater discharge contains total dissolved solids (TDS) concentrations exceeding 2,000 milligrams per liter (see page 10 of Supporting Document No. 4). Although Order No. R9-2008-002 does not prescribe an effluent limitation for TDS, the Order requires that the discharge not cause, have a reasonable potential to cause, or contribute to an in-stream excursion above any applicable receiving water quality objectives. As discussed in Finding No. 4 of the Tentative Order, the discharge has a reasonable potential to contribute to an in-stream excursion above the TDS water quality objective, which is established at 1,500 mg/L for the Mission San Diego Hydrologic Unit.

In order to address exceedances of the TDS objective, the Tentative Order will establish a time schedule for Kinder Morgan to achieve full compliance with the receiving water quality TDS objective. The compliance deadline of November 30, 2015 prescribed in the Tentative Order is reasonable for Kinder Morgan to evaluate the problem and implement appropriate measures to achieve compliance. An interim effluent limitation for TDS is prescribed in the Tentative Order that is based upon the quality of the influent to the treatment facility.

The San Diego Water Board received two comment letters for this item from the City of San Diego's Public Utilities Department and the Transportation & Storm Water Department (Supporting Document No. 6). A response to these comment letters is provided (Supporting Document No. 7). In general, the comments were concerned with the potential impacts from the discharge and the appropriateness of the Time Schedule Order's provisions.

By letter dated August 24, 2010 (see Supporting Document No. 3), Kinder Morgan requested approval to increase the average daily discharge rate to 1.26 million gallons per day. Kinder Morgan reported that the increased discharge rate will accelerate cleanup of groundwater to meet the compliance deadline. In response to the request, Provision No. 6 of the Tentative Order established a revised flow limit. Since release of the Tentative Order, the San Diego Water Board has determined that Kinder Morgan's request to increase its average daily discharge rate will be addressed in a separate letter modifying the Notice of Enrollment. This letter, issued by the Executive Officer, will contain any necessary monitoring requirements for assessment of compliance by the increased flow with water quality regulations. The errata sheet in Supporting Document No. 8 reflects this change.

SIGNIFICANT CHANGES: None.

COMPLIANCE: On December 10, 2008, ACL Order No. R9-2008-0134 was adopted for $222,000 in mandatory and discretionary penalties for violations of effluent limitations in the previous groundwater discharge permit, Order No. R9-2001-096. Violations included exceedances of total nitrogen and toxicity effluent limitations. Additional treatment systems were subsequently added to address the violations.

LEGAL ISSUES: None

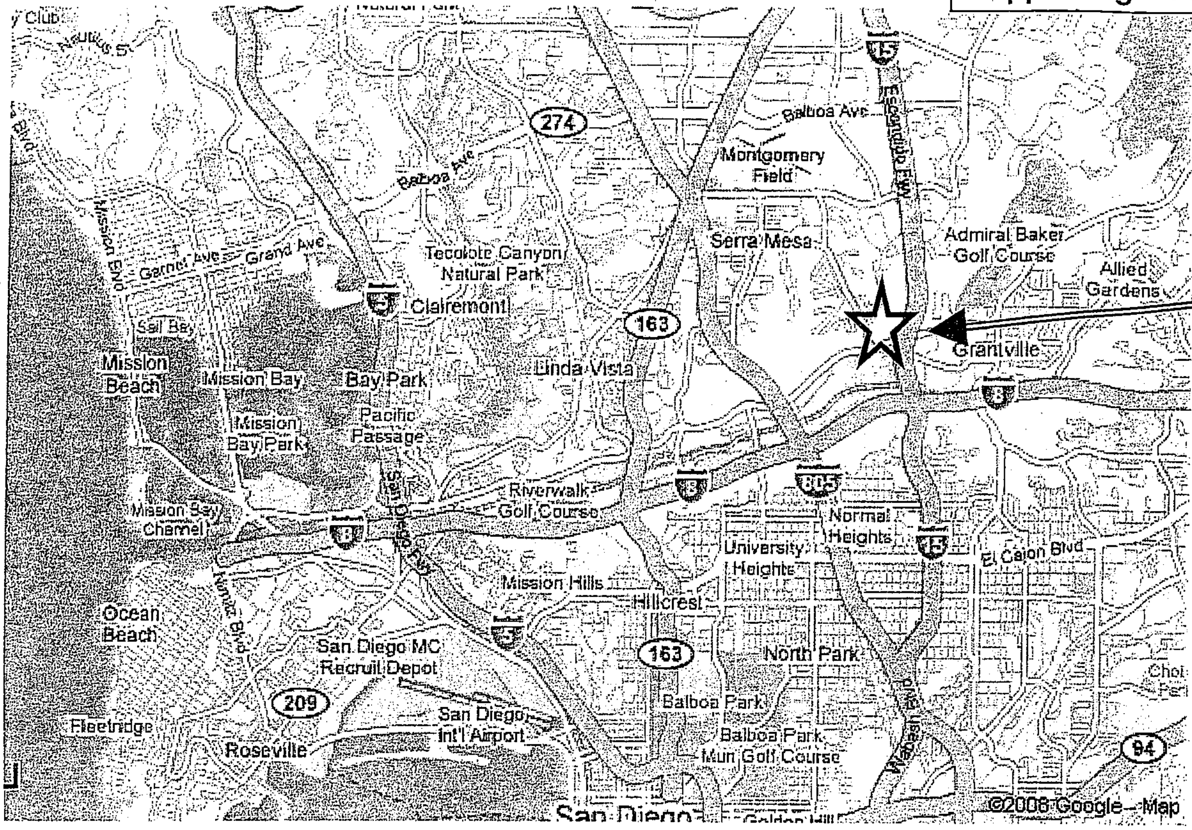
SUPPORTING DOCUMENTS:

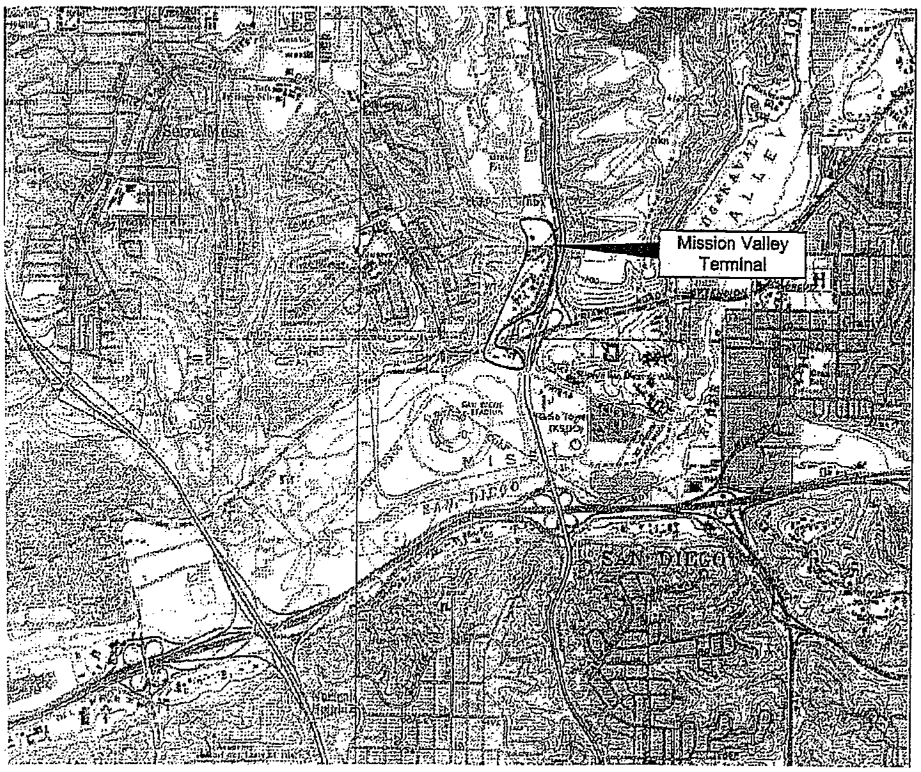
1. Vicinity Map of Mission Valley Terminal.
2. Time Schedule Order No. R9-2011-0052
3. Discharger letter requesting an increase in flow, dated August 24, 2010.
4. Discharger's Executive Summary of Mission Valley Terminal operations, dated August 5, 2009.
5. Public Notice
6. Comment Letters
   a. City of San Diego Public Utilities Department
   b. City of San Diego Transportation & Storm Water Department
7. Response to Comments Letter
8. Errata Sheet for Tentative Order No. R9-2011-0052

RECOMMENDATION: Adoption of Tentative Time Schedule Order R9-2011-00052 with errata.

EXHIBIT 3

September 14, 2011, Item 7,
Supporting Document 1 – Vicinity Map





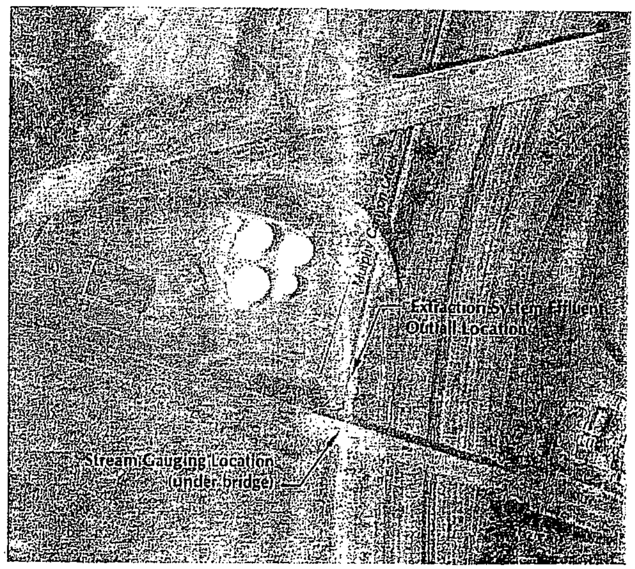


EXHIBIT 4

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

September 14, 2011
Item No. 7
Supporting Document No. 2

TIME SCHEDULE ORDER NO. R9-2011-0052

AN ORDER PRESCRIBING A TIME SCHEDULE FOR THE KINDER MORGAN ENERGY PARTNERS TO COMPLY WITH DISCHARGE PROHIBITION NO. IV.C OF ORDER NO. R9-2008-0002 (NPDES PERMIT No. CAG919002) FOR ITS MISSION VALLEY TERMINAL REMEDIATION DEWATERING DISCHARGE TO MURPHY CANYON CREEK

The California Regional Water Quality Control Board, San Diego Region (hereinafter San Diego Water Board) finds that:

1. **SFPP, L.P. operating partnership of Kinder Morgan Energy Partners, L.P. (hereinafter Kinder Morgan or Discharger)** discharges up to 795,000 gallons per day of treated groundwater to the San Diego River via Murphy Canyon Creek (Mission San Diego Hydrologic Area, 907.11) pursuant to waste discharge requirements prescribed in Order No. R9-2008-0002 (NPDES No. CAG919002). On August 24, 2010, Kinder Morgan requested the San Diego Water Board increase the allowable discharge rate to 1.26 million gallons per day (mgd).

2. Kinder Morgan is discharging treated groundwater generated by a project to cleanup soil and groundwater contamination downgradient of the Mission Valley Terminal Aboveground Fuel Tank Farm, located at 9950 and 9966 San Diego Mission Road, San Diego, CA. The cleanup is being conducted in accordance with San Diego Water Board Order No. 92-01, which prescribes a deadline of December 31, 2013 for the cleanup and abatement of petroleum hydrocarbons and associated compounds at the site. The increase in the discharge flow rate discussed in Finding No. 1 will enhance the prospect of Kinder Morgan achieving this deadline.

3. Order No. R9-2008-0002 establishes effluent limitations for 17 general constituents, 126 priority pollutants including metals, and 9 other volatile/metal constitutes. No documented violations of the effluent limitations have occurred since January 2009 when Kinder Morgan began full operation of the current treatment system.

4. Order No. R9-2008-0002 neither specifies an effluent limitation nor requires monitoring of the discharge for Total Dissolved Solids (TDS). Based upon the following facts, however, the discharge of groundwater as discussed in the above Finding No. 2 has a reasonable potential to contribute to an in-stream excursion above water quality objectives (WQO) for Total Dissolved Solids (TDS) established in the Water Quality Control Plan for the San Diego Basin (Basin Plan) which would be in violation of Discharge Prohibition IV.C and Receiving Water Limitation VI.A.8.

a. The Basin Plan states, "*Inland surface waters shall not contain total dissolved solids in concentrations in excess of the numerical objectives described in Table 3-2.*"

Table 3-2 excerpt:

Hydrologic Unit	***Constituent (mg/L) - TDS***
Mission San Diego (907.11)	1,500

b. Prohibition IV.C of Order No. R9-2008-0002 states, "*The discharge shall not cause, or contribute to an in-stream excursion above any applicable criterion promulgated by USEPA pursuant to section 303 of the (federal Clean Water Act) or water quality objectives established by the State or Regional Boards.*"

c. Receiving Water Limitations VI.A.8. of Order No. R9-2008-0002 states, "*Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this WDR. The discharge of groundwater extraction waste from any site shall not, separately or jointly with any other discharge, cause violations of the following water quality objectives. These limitations apply unless more stringent provisions exist in either the Basin Plan, or an applicable State plan. ... 8. Mineral Objectives for Inland Surface Waters (fresh): San Diego Hydrographic Unit 7.11, Objective (mg/L) TDS – 1500.*"

d. Kinder Morgan has reported that the treated groundwater is high in total TDS concentrations (typically over 2000 milligrams per liter [mg/L]). Kinder Morgan further reported that the various treatment processes (oil/water separation, particulate filtration, manganese and iron removal, carbon absorption, denitrification, and oxygenation do not result in significant changes in the overall TDS of the treated groundwater.

e. Murphy Canyon Creek has limited, if any, assimilative capacity for additional TDS loading. Murphy Canyon Creek is on the Clean Water Act §303(d) list of water quality limited waterbodies for TDS. In addition, sampling conducted in November 2010 within Murphy Canyon Creek both upstream and downstream of the Mission Valley Terminals discharge point detected TDS concentrations in excess of the Basin Plan WQO.

Table 1: TDS Concentrations (mg/L) in Murphy Canyon Creek

Date:	*907MCC2US (upstream)*	*907MCC1US (upstream)*	*907MCC1DS (downstream)*	*907MCC2DS (downstream)*
11/10/10	2,227	2,321	2,187	2,195
11/16/10		2,665	2,504	2,326
11/18/10		2,480	2,256	2,163

5. The Basin Plan lists the following beneficial uses for Murphy Canyon Creek: agricultural supply, industrial process supply, contact water recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat, and rare, threatened, or endangered species. Murphy Canyon Creek is excepted from the municipal drinking water supply beneficial use.

6. The compliance time schedule in this Order includes an interim effluent limitation for TDS based upon the quality of influent. In developing the interim limitation, best professional judgment was applied. When there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9 percent of the data points will lie within 3.3 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row, 3rd Edition, January 1986). Where actual sampling shows an exceedance of the proposed 3.3 standard deviation limit, the maximum detected concentration has been established as the interim limitation. If the statistically projected interim limitation is less than the maximum observed effluent concentration, the interim limitation is established as the maximum observed concentration. The following table summarizes the calculation of the interim effluent limitation for TDS:

Table 2. Interim Limitation Calculation Summary

Parameter	**Units**	**MEC**	**Mean**	**Standard Deviation**	**Number of Samples**	**Interim Limitation (Maximum Daily)**
Total Dissolved Solids	mg/L	2,300	2,071	95.6	38	2,400

7. This Order is issued in accordance with California Water Code (CWC) section 13300, which states: "*Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a*

detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements."

8. Pursuant to CWC section 13267(b), the San Diego Water Board may require the discharger to furnish, under penalty of perjury, technical or monitoring program reports. Monitoring reports and other technical reports are necessary to determine compliance with the NPDES permit and with this Order.

9. This enforcement action is being taken for the protection of the environment and is exempt from the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.) in accordance with section 15308, chapter 3, Title 14 of the California Code of Regulations. The issuance of this Order is also an enforcement action taken by a regulatory agency and is exempt from the provisions of CEQA pursuant to section 15321 (a)(2), Chapter 3, Title 14 of the California Code of Regulations. Finally, issuance of this Order is exempt from the provisions of CEQA because the Order does not constitute approval of a project.

10. Any person adversely affected by this action of the San Diego Water Board may petition the State Water Resources Control Board (State Water Board) to review the action. The petition must be received by the State Water Board within 30 days of the date on which the action was taken. Copies of the law and regulations applicable to filing petitions will be provided on request.

IT IS HEREBY ORDERED THAT pursuant to CWC sections 13300 and 13267 that Kinder Morgan Energy Partners (Discharger) shall comply with the following time schedule to ensure that the discharge does not cause, have a reasonable potential to cause, or contribute to an in-stream excursion above the Basin Plan's Water Quality Objective for TDS as required by Order No. R9-2008-0002, Discharge Prohibition IV.C and Receiving Water Limitations VI.A.8:

Table 3. Compliance Schedule

Task	Compliance Date
Initiate monitoring as described in Directive No. 2 below.	September 5, 2011
Submit and implement a plan for additional receiving water monitoring that incorporates the provisions described in Directive No. 3 below and any other monitoring measures necessary to assess the compliance of the discharge with Discharge Prohibition IV.C and the impact of the discharge on the downstream beneficial uses.	November 30, 2011
Submit technical report summarizing the results of the study to evaluate the potential for discharge to cause, or contribute to an in-stream excursion above the Basin Plan's Water Quality Objective for TDS as required by Order No. R9-2008-0002, Discharge Prohibition IV.C and Receiving Water Limitations VI.A.8.	June 28, 2013
Submit a workplan that provides a detailed schedule of specific actions and options, including at least one option for additional treatment of the discharge, that Kinder Morgan will take to address compliance with Discharge Prohibition IV.C Order for TDS concentrations in the discharge.	September 30, 2013
Complete feasibility studies for selection of treatment options.	March 31, 2014
Complete preliminary design of the appropriate treatment option.	June 30, 2014
Develop, implement and submit to the San Diego Water Board, a mitigation plan to compensate for TDS loading by the effluent discharge in excess of the Basin Plan's WQO within the San Diego River watershed.	June 30, 2014
Complete final design and select contractor for construction of treatment system.	January 30, 2015

Begin construction of selected treatment option, if other options, which were identified in workplan and pursued by the Discharger are ineffective in demonstrating compliance with Discharge Prohibition IV.C.	April 30, 2015
Complete construction.	September 30, 2015
Achieve full compliance with Discharge Prohibition IV.C	November 30, 2015

1. Progress reports shall be submitted semiannually and as otherwise required according to the time schedule and shall continue until compliance is achieved.

2. In addition to constituents in the discharge already being analyzed for compliance with Order No. R9-2008-0002, the Discharger shall also analyze a monthly grab sample of influent and effluent for TDS. The Discharger shall also include a grab sample of TDS with the monthly upstream receiving water monitoring conducted for Order No. R9-2008-0002.

3. In addition to the Monitoring and Reporting Program requirements specified in the June 23, 2009 enrollment and in Order No. R9-2008-0002, the Discharger shall develop and implement a monitoring plan for Murphy Canyon Creek and the San Diego River at various predetermined points during the increased discharge flow rate to observe any effects that the flows are having on the chemical, physical and biological environment in the receiving waters (Receiving Water Limitations; Water Quality Objectives; and Beneficial Uses). The discharger shall review and consider any additional surface water monitoring data that was conducted by other regulated parties within the sub-watershed.

   a) Additional monitoring points shall include at a minimum the following:

      i. Point #1: At the point where Murphy Canyon Creek discharges in to the San Diego River;
      ii. Point #2: 100 feet downstream of Point #1 within the San Diego River;
      iii. Point #3: 500 feet downstream of Point #2 within the San Diego River.
      iv. Alternative locations may be proposed by the discharger based on the safety and accessibility of locations.

b) The Discharger shall make the following observations and measurements at each point identified in Directive 3.a above and any additional points identified in the monitoring plan at a minimum frequency of every two weeks during the first quarter of monitoring. If monitoring during the first two weeks demonstrates insignificant variability, then the monitoring may be reduced to monthly concurrently with the effluent sampling in directive 2:
   i. Visual observation of the receiving water for color, turbidity plumes, erosion, and sedimentation;
   ii. pH;
   iii. Temperature;
   iv. Dissolved Oxygen and
   v. TDS. Conductivity may alternatively be measured with sufficient data demonstrating the correlation between conductivity and laboratory TDS measurements.

c) The Discharger shall conduct upstream (reference) and downstream bioassessment monitoring to assess the condition of biological communities in the receiving waters:
   i. Locations: The discharger shall choose the locations as suitable to conduct the bioassessment. Where possible the bioassessment monitoring should be collocated with the receiving waters monitoring. The locations must have year round flow.
   ii. Frequency: Bioassessment stations must be monitored twice a year in May or June and in September or October.
   iii. Parameters/Methods: The bioassessment analysis procedures must include calculation of the Index of Biotic Integrity (IBI) for benthic macroinvertebrates for all bioassessment stations, as outlined in "A Quantitative Tool for Assessing the Integrity of Southern Coastal California Streams," by Ode, et al. 2005. If bioassessment monitoring cannot be collocated with the receiving waters monitoring, then the Discharger must also measure the constituents in Task 2.b at the bioassessment station. The discharger must conduct, concurrently with all required macroinvertebrate collections, the "full" suite of physical/habitat characterization measurements specified in the SWAMP Bioassessment SOP.
   iv. Monitoring of bioassessment stations must be conducted according to bioassessment procedures developed by the Surface Water Ambient Monitoring Program (SWAMP), as amended.
   v. A qualified professional environmental laboratory must perform all laboratory, quality assurance, and analytical procedures.

vi. An appropriately experienced and trained professional must perform all sampling.

4. The following interim effluent limitation for concentration of TDS in the discharge shall be effective until November 30, 2015 or when the Discharger achieves compliance with Order No. R9-2008-0002, Discharge Prohibition IV.C and Receiving Water Limitation VI.A.8, whichever is earlier:

Table 4: *Interim Effluent Limitation for TDS*

Parameter	Interim Average Monthly Effluent Limitation (AMEL)
TDS	The concentration in the discharge from the treatment process to Murphy Canyon Creek shall not exceed an average monthly concentration of 2,400 mg/L.

5. If noncompliance with the interim effluent limitation is confirmed through Tasks 1 through 3 above, within 24 months of the adoption of this Order, the Discharger shall develop, implement, and submit to the San Diego Water Board, a Pollution Prevention Plan (PPP) pursuant to CWC Section 13263.3 for TDS.

6. The discharge of groundwater to the San Diego River via Murphy Canyon Creek shall not exceed 1.26 million gallons per day.

7. Failure to comply with requirements of this Order may subject the Dischargers to enforcement action, including but not limited to administrative enforcement orders requiring you to cease and desist from violations, imposition of administrative civil liability, pursuant to Water Code sections 13350, in an amount not to exceed $5,000 for each day in which the violation occurs referral to the State Attorney General for injunctive relief and referral to the District Attorney for criminal prosecution.

8. As required by the California Business and Professions code Sections 6734, 7835, and 7835.1, all technical reports required herein shall be prepared by, or under the supervision of, a California Registered Engineer or Registered Geologist (as applicable) and shall be signed by the registered professional.

9. Any person signing a document submitted under this Order shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those

individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

I, David Gibson, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on August 10, 2011.

TENTATIVE
DAVID W. GIBSON
Executive Officer

EXHIBIT 5

September 14, 2011
Item No. 7
Supporting Document No. 3

SAN DIEGO REGIONAL
WATER QUALITY
CONTROL BOARD

2010 SEP -1 P 1:43

ARCADIS

Infrastructure, environment, buildings

ARCADIS U.S., Inc.
3150 Bristol Street
Suite 250
Costa Mesa
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Tel 714.444.0111
Fax 714.444.0117
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ENVIRONMENT

Date:
August 24, 2010

Contact:
Marcelo Garbiero

Phone:
714.444.0111

Email:
marcelo.garbiero@arcadis-us.com

Our ref:
CM010143.0082

Ms. Whitney Ghoram
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, California 92123

Subject:

Request to Increase Daily Average Discharge Rate under Order No. R9-2008-0002, NPDES Permit No. CAG919002; Mission Valley Terminal, 9950 and 9966 San Diego Mission Road, San Diego, California

Dear Ms. Ghoram:

ARCADIS U.S., Inc. (ARCADIS), formerly LFR Inc., has prepared this submittal on behalf of SFPP, L.P., operating partner of Kinder Morgan Energy Partners, L.P. (Kinder Morgan) to request modifications to the existing enrollment under Order No. R9-2008-0002, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAG919002 (RWQCB 2008) for the Mission Valley Terminal (MVT), which is located at 9950 and 9960 San Diego Mission Road, San Diego, California (Figure 1). The discharge to Murphy Canyon Creek is a result of groundwater extraction and treatment conducted as part of the ongoing remediation activities occurring in accordance with Addendum No. 5 to Cleanup and Abatement Order (CAO) No. 92-01 (RWQCB 2005).

ARCADIS seeks the approval of the California Regional Water Quality Control Board, San Diego Region (RWQCB) to modify enrollment in the General Permit to allow an increase in the average daily discharge rate to 1.26 million gallons per day (mgd) from the currently approved 0.795 mgd. This increase in the average daily discharge rate is requested to allow for additional groundwater extraction that will accelerate cleanup of groundwater to meet the compliance criteria set forth in Directive No. 3 of Addendum No. 5 ahead of the December 31, 2013 cleanup deadline. This increased discharge rate will only be necessary until December 31, 2013; the average discharge will likely decrease to approximately 0.33 mgd thereafter.

This request has been prepared in accordance with the approach used in previous requests for modification to the allowable average daily discharge rate (LFR 2005, 2009) that were approved by the RWQCB (2005, 2009). In the most recent modification of enrollment under Order R9-2008-0002, the RWQCB approved an "increase in the existing permitted discharge rate of 0.505 mgd (approximately 350 gpm) to 0.795 mgd (approximately 550 gpm)."

The scope of work completed to support this request includes the following:

- evaluation of the alternative groundwater disposal options
- presentation of the basis for the requested enrollment modification
- determination of the current and future constituent mass discharge rates to the receiving water (Murphy Canyon Creek)
- evaluation of the potential impact of the increased flow and mass discharge rates on the receiving water.

The methodologies and results of these activities are presented below.

Alternative Disposal Option

The discharger submitted an evaluation of groundwater disposal alternatives in the application for re-enrollment (LFR 2009a) under Order No. R9-2008-0002, which was approved by the RWQCB (2009). Alternative disposal options were evaluated for technical and economic feasibility as required by the Notice of Intent application. The alternative disposal options evaluated included aquifer re-injection, discharge to a Publicly Owned Treatment Works, and discharge to a water reclamation facility. Based on the general assessment of technical and economic feasibility of alternate disposal options, it was concluded that continued discharge to surface waters under NPDES General Permit No. CAG919002 is the only feasible option.

Further evidence of the infeasibility of aquifer reinjection was presented in support documentation submitted to the RWQCB (LFR 2009b) for the Board Meeting held on August 12, 2009. In part, this document presents additional discussion that supports the reinjection of treated groundwater as an infeasible option due to the technical risks associated with this approach such as chemical encrustation within the aquifer, chemical encrustation and biofouling within the injection system, and potentially compromising the existing property boundary hydraulic barrier.

Reasons for Enrollment Modification

The enrollment modification to increase the average daily discharge rate is requested to allow for additional groundwater extraction that will accelerate cleanup of groundwater to meet the compliance criteria and schedule set forth in Directive No. 3 of Addendum No. 5. This schedule requires compliance to be met "as soon as practicable and no later than December 31, 2013." The objective is to enhance and accelerate groundwater remediation activities in order to comply with the criteria ahead of the deadline specified.

The existing groundwater extraction treatment system (GWETS) will be supplemented with a new, stand-alone GWETS that will focus on accelerating the groundwater cleanup. The existing GWETS will remain in operation and focus on other remedial objectives including maintaining the downgradient property boundary hydraulic containment barrier that prevents impacted groundwater from leaving the MVT property. The new GWETS will include pumping of up to 12 groundwater extraction wells (6 existing and 6 proposed). An increase in the allowable average daily discharge rate would allow an increase in pumping flow rates from the groundwater extraction wells, thereby accelerating the removal of contaminant mass from the aquifer and enhancing the incidental biodegradation of contaminants in the aquifer through groundwater mixing.

It is anticipated that the increased allowable average daily discharge rate of 1.26 mgd (875 gallons per minute [gpm]) will only be necessary through 2013. At that time, the new groundwater treatment plant (GWTP) that is a component of the proposed GWETS would remain in operation and be refocused on future remedial objectives including continued operation of the downgradient property boundary hydraulic containment barrier and on-property remediation of soil and groundwater. It is anticipated that these future needs would only require a discharge rate of approximately 0.33 mgd (200 gpm).

Data Collection and Evaluation

Detected Constituents and Mass Discharge Estimations

The monitoring and reporting program for the current NPDES permit requires that the effluent be monitored on a monthly, quarterly, and semi-annual basis. The analytical results from the most recent 12 months of compliance monitoring between July 2009 and June 2010 ("the evaluation period") were used in estimating the mass discharge rates for each constituent. This period of time was selected because it is most representative of the future operation for the new GWTP that will employ the same technologies used by the existing GWTP (i.e., granular activated carbon adsorption and anoxic denitrification). A complete list of the constituents that are routinely monitored in accordance with the NPDES permit is listed in Table 1 along with their analytical results during the evaluation period. Table 2 presents only those constituents for which detectable concentrations were reported by the analytical laboratory during the evaluation period.

Mass discharge was estimated as the mass of the constituent entering Murphy Canyon Creek per gallon of total flow in the creek. The mass discharge rate was estimated for each of the detected constituents at the historic effluent allowable effluent flow rates of 205 gpm, 350 gpm, the current allowable flow rate of 550 gpm, and the proposed allowable flow rate of 875 gpm. The mass of each detected constituent entering the creek as grams per minute was then divided by the total flow in gallons per minute flowing in the creek to obtain the mass of each constituent per gallon of water flowing downstream of the discharge outfall point. Results of the mass discharge estimations are summarized in Table 2.

Evaluation of Potential Impacts of Increased Discharge Flow

The purpose of this evaluation is to review the available data and assess whether the proposed increase in discharge flow will result in detrimental effects to the receiving water, particularly the aquatic biota.

Information used in this evaluation included the following:

- NPDES Discharge Permit No. CAG919002
- Water Quality and Aquatic Habitat Assessment (LFR 2003)
- data presented in this letter
- relevant literature and correspondence (as cited).

Changes in Water Chemistry

There is no indication that the chemical composition of the effluent at the proposed maximum discharge rate of 875 gpm will differ significantly from existing conditions.

Process water to be treated by the proposed system is being pumped from the same water-bearing unit in Mission Valley, and as such the water chemistry is expected to be very similar. Additionally, these proposed modifications do not seek any variance to permitted discharge limits. The proposed maximum discharge of 875 gpm would continue to meet these requirements. Table 3 lists all analytes that were detected in the evaluation period. All analytical results for these constituents were within permitted discharge limits.

To assess the potential issues associated with the water chemistry in terms of aquatic resource protection, analytical data for the evaluation period have been further assessed with respect to receiving water criteria. The data from Table 2 (indicating detected compounds during the evaluation period) are presented with relevant comparison values in Table 3. Where available, relevant comparison values in Table 3 include values for upstream Murphy Canyon Creek samples (LFR 2003), upstream San Diego River samples (LFR 2003), surface aquatic life protection (Marshack 2008), and freshwater quality criteria promulgated by the National Oceanic and Atmospheric Administration (NOAA) as Screening Quick Reference Tables (SQuiRT tables; NOAA 2008 update). This evaluation assumes that the downstream concentrations associated with the current permitted discharge limit are protective of aquatic resources.

All of the constituent concentrations detected in the evaluation period are below the relevant comparison values, and most are an order of magnitude below the relevant value. Arsenic and copper concentrations are well below the 4-day average continuous concentration value (Marshack) and the NOAA "chronic" exposure value. Hardness is similar to the upstream Murphy Canyon Creek value. Manganese is below the NOAA "chronic" exposure value (no 4-day average continuous concentration value is available), and well below the limit established in the NPDES permit. Nickel is well below both the 4-day average continuous concentration value and the NOAA "chronic" exposure value. Sodium was recorded at a concentration of 320 milligrams per liter (mg/L) in the effluent, compared to 220 mg/L recorded upstream in Murphy Canyon Creek in 2003 and 200 mg/L in the San Diego River in 2003. A relevant comparison value was not available for this constituent. Values of pH are comparable to those previously measured upstream in the San Diego River. A relevant comparison value was not identified for total nitrogen, total suspended solids, fecal coliforms, or total coliforms; however, these constituents were maintained below the limit established in the NPDES permit.

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Summary

Based on the relevant comparison values identified for the detectable constituents in the discharge and NPDES permit discharge limitations, discharge concentrations are expected to be protective of freshwater aquatic life and in compliance with permit requirements. Additionally, the effluent discharge will become mixed with natural stream flows in Murphy Canyon Creek and the San Diego River, and most constituent concentrations will decrease with downstream movement.

Based on the results of this evaluation, modification of the existing enrollment under Order No. R9-2008-0002, NPDES Permit No. CAG919002 is requested such that the maximum allowable discharge rate for the site is modified to 1.26 mgd (approximately 875 gpm). We request your expedited review and response to this proposed modification which will assist Kinder Morgan in accelerating groundwater cleanup to meet the compliance criteria set forth in Directive No. 3 of Addendum No. 5 of CAO No. 92-01. We look forward to receiving your response, and are available to meet and discuss this request.

Please contact either of the undersigned at 714.444.0111 or Scott Martin (Kinder Morgan) at 714.560.4775 with any questions or comments you may have regarding this matter.

Sincerely,

ARCADIS U.S., Inc.

Marcelo A. Garbiero, P.E.
Senior Civil Engineer

Jennifer A. Rothman

Jennifer S. Rothman, P.E.
Principal Civil Engineer

Attachments

Copies:
Scott Martin, Kinder Morgan
Sean McClain, RWQCB

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References Cited

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Tables

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TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002 / 001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Flowrate											
Flowrate	7/1/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	7/2/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	7/3/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	7/4/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	7/5/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	7/6/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	7/7/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	7/8/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	7/9/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	7/10/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	7/11/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	7/12/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	7/13/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	7/14/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.33	MGD
Flowrate	7/15/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	7/16/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	7/17/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.30	MGD
Flowrate	7/18/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	7/19/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	7/20/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	7/21/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	7/22/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	7/23/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.38	MGD
Flowrate	7/24/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	7/25/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.35	MGD
Flowrate	7/26/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	7/27/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
Flowrate	7/28/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
Flowrate	7/29/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.29	MGD
Flowrate	7/30/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	7/31/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.38	MGD
Flowrate	8/1/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	8/2/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	8/3/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.37	MGD
Flowrate	8/4/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	8/5/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	8/6/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	8/7/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	8/8/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	8/9/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	8/10/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	8/11/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	8/12/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	8/13/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	8/14/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	8/15/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	8/16/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD

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PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Flowrate											
Flowrate	8/17/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.30	MGD
Flowrate	8/18/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	8/19/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	8/20/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
Flowrate	8/21/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	8/22/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	8/23/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.30	MGD
Flowrate	8/24/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	8/25/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.35	MGD
Flowrate	8/26/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.37	MGD
Flowrate	8/27/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	8/28/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.38	MGD
Flowrate	8/29/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	8/30/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	8/31/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	9/1/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	9/2/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	9/3/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	9/4/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	9/5/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	9/6/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	9/7/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	9/8/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
Flowrate	9/9/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	9/10/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.37	MGD
Flowrate	9/11/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.37	MGD
Flowrate	9/12/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	9/13/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.049	MGD
Flowrate	9/14/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.26	MGD
Flowrate	9/15/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
Flowrate	9/16/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	9/17/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
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Flowrate	9/29/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	9/30/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.23	MGD
Flowrate	10/1/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.16	MGD
Flowrate	10/2/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.35	MGD

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Flowrate	10/8/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
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Flowrate	10/25/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	10/26/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	10/27/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	10/28/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	10/29/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	10/30/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	10/31/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	11/1/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	11/2/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	11/3/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	11/4/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	11/5/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	11/6/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	11/7/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	11/8/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	11/9/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	11/10/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	11/11/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	11/12/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	11/13/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	11/14/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	11/15/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	11/16/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	11/17/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	11/18/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Flowrate											
Flowrate	11/19/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	11/20/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.32	MGD
Flowrate	11/21/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	11/22/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	11/23/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
Flowrate	11/24/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.32	MGD
Flowrate	11/25/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	11/26/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	11/27/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.37	MGD
Flowrate	11/28/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	11/29/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	11/30/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	12/1/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	12/2/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	12/3/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.30	MGD
Flowrate	12/4/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	12/5/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	12/6/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	12/7/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.29	MGD
Flowrate	12/8/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	12/9/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
Flowrate	12/10/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	12/11/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	12/12/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	12/13/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	12/14/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	12/15/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.26	MGD
Flowrate	12/16/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	12/17/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	12/18/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	12/19/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	12/20/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.49	MGD
Flowrate	12/21/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	12/22/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	12/23/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	12/24/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	12/25/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	12/26/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	12/27/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	12/28/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	12/29/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	12/30/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	12/31/09	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/1/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/2/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/3/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/4/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002 / 001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Flowrate											
Flowrate	1/5/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	1/6/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	1/7/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	1/8/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	1/9/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.49	MGD
Flowrate	1/10/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/11/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	1/12/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	1/13/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	1/14/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.49	MGD
Flowrate	1/15/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	1/16/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/17/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/18/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.34	MGD
Flowrate	1/19/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.33	MGD
Flowrate	1/20/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	1/21/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	1/22/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	1/23/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/24/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	1/25/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	1/26/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	1/27/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.32	MGD
Flowrate	1/28/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/29/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.37	MGD
Flowrate	1/30/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	1/31/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	2/1/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.37	MGD
Flowrate	2/2/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	2/3/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	2/4/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.32	MGD
Flowrate	2/5/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	2/6/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	2/7/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	2/8/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.25	MGD
Flowrate	2/9/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.31	MGD
Flowrate	2/10/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	2/11/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	2/12/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	2/13/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	2/14/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	2/15/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.32	MGD
Flowrate	2/16/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	2/17/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	2/18/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.49	MGD
Flowrate	2/19/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	2/20/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.49	MGD

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Flowrate											
Flowrate	2/21/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.45	MGD
Flowrate	2/22/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.45	MGD
Flowrate	2/23/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.35	MGD
Flowrate	2/24/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.45	MGD
Flowrate	2/25/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.47	MGD
Flowrate	2/26/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.41	MGD
Flowrate	2/27/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.41	MGD
Flowrate	2/28/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.41	MGD
Flowrate	3/1/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.36	MGD
Flowrate	3/2/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.40	MGD
Flowrate	3/3/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.38	MGD
Flowrate	3/4/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.35	MGD
Flowrate	3/5/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.22	MGD
Flowrate	3/6/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.43	MGD
Flowrate	3/7/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.43	MGD
Flowrate	3/8/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.40	MGD
Flowrate	3/9/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.45	MGD
Flowrate	3/10/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.41	MGD
Flowrate	3/11/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.41	MGD
Flowrate	3/12/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.47	MGD
Flowrate	3/13/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.43	MGD
Flowrate	3/14/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.46	MGD
Flowrate	3/15/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.28	MGD
Flowrate	3/16/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.48	MGD
Flowrate	3/17/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.44	MGD
Flowrate	3/18/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.37	MGD
Flowrate	3/19/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.40	MGD
Flowrate	3/20/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.45	MGD
Flowrate	3/21/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.48	MGD
Flowrate	3/22/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.42	MGD
Flowrate	3/23/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.46	MGD
Flowrate	3/24/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.42	MGD
Flowrate	3/25/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.47	MGD
Flowrate	3/26/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.41	MGD
Flowrate	3/27/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.46	MGD
Flowrate	3/28/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.47	MGD
Flowrate	3/29/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.42	MGD
Flowrate	3/30/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.46	MGD
Flowrate	3/31/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.43	MGD
Flowrate	4/1/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.43	MGD
Flowrate	4/2/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.43	MGD
Flowrate	4/3/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.45	MGD
Flowrate	4/4/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.44	MGD
Flowrate	4/5/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.43	MGD
Flowrate	4/6/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.45	MGD
Flowrate	4/7/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.46	MGD
Flowrate	4/8/10	Field	--	Field Measurement	--	--	0.51	MGD	--	0.42	MGD

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Flowrate											
Flowrate	4/9/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.18	MGD
Flowrate	4/10/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.20	MGD
Flowrate	4/11/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.17	MGD
Flowrate	4/12/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.27	MGD
Flowrate	4/13/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	4/14/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	4/15/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	4/16/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	4/17/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	4/18/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	4/19/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	4/20/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	4/21/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	4/22/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	4/23/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.38	MGD
Flowrate	4/24/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	4/25/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	4/26/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	4/27/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	4/28/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	4/29/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	4/30/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	5/1/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	5/2/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	5/3/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	5/4/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.32	MGD
Flowrate	5/5/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.0040	MGD
Flowrate	5/6/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.24	MGD
Flowrate	5/7/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	5/8/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	5/9/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.48	MGD
Flowrate	5/10/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.34	MGD
Flowrate	5/11/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	5/12/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.47	MGD
Flowrate	5/13/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	5/14/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	5/15/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	5/16/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	5/17/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.38	MGD
Flowrate	5/18/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	5/19/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
Flowrate	5/20/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	5/21/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	5/22/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD
Flowrate	5/23/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	5/24/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	5/25/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.41	MGD

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010
Mission Valley Terminal
San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002 / 001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Flowrate											
Flowrate	5/26/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	5/27/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	5/28/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	5/29/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	5/30/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	5/31/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.39	MGD
Flowrate	6/1/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.27	MGD
Flowrate	6/2/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	6/3/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.32	MGD
Flowrate	6/4/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.22	MGD
Flowrate	6/5/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.37	MGD
Flowrate	6/6/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	6/7/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.37	MGD
Flowrate	6/8/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.46	MGD
Flowrate	6/9/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	6/10/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	6/11/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.38	MGD
Flowrate	6/12/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	6/13/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	6/14/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	6/15/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	6/16/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.45	MGD
Flowrate	6/17/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.36	MGD
Flowrate	6/18/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.34	MGD
Flowrate	6/19/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	6/20/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	6/21/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	6/22/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.44	MGD
Flowrate	6/23/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.42	MGD
Flowrate	6/24/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	6/25/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.40	MGD
Flowrate	6/26/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	6/27/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.43	MGD
Flowrate	6/28/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.23	MGD
Flowrate	6/29/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.094	MGD
Flowrate	6/30/10	Field	–	Field Measurement	–	–	0.51	MGD	–	0.34	MGD
Inorganics											
Total Residual Chlorine	7/2/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/6/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/7/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/9/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/10/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/13/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/14/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/16/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/20/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/21/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010
Mission Valley Terminal
San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Inorganics											
Total Residual Chlorine	7/22/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/23/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/24/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/25/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/27/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	7/28/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/4/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/5/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/11/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/12/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/13/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/14/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/15/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/16/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/17/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/18/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/19/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/20/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/21/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/22/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/23/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/24/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/25/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/26/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/27/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	8/28/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	9/15/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	9/17/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	9/18/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	9/19/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	9/22/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	9/23/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	10/16/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/7/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/13/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/14/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/15/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/16/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/17/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/18/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/19/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/20/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/21/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/22/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/23/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/24/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/25/09	Field	--	Field Measurement	--	2.0	8.0	µg/L	<1.2	<0.0049	lb/d

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Inorganics											
Total Residual Chlorine	11/26/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/27/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/28/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/29/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	11/30/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/1/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/2/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/3/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/4/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/5/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/6/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/8/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/9/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/10/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/11/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/12/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/14/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/15/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/16/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/17/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/18/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/19/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/20/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/21/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/22/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/23/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/24/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/25/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/26/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/27/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	12/28/09	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	1/13/10	Test Am.	ITA0910-01	EPA 330.5	–	2.0	8.0	µg/L	<100	<0.41	lb/d
Total Residual Chlorine	1/29/10	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	2/1/10	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	2/3/10	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	3/9/10	Test Am.	ITC0999-01	SM 4500-Cl G	–	2.0	8.0	µg/L	<100	<0.41	lb/d
Total Residual Chlorine	4/6/10	Test Am.	ITD0395-01	SM 4500-Cl G	–	2.0	8.0	µg/L	<100	<0.41	lb/d
Total Residual Chlorine	5/4/10	Test Am.	ITE0182-01	SM 4500-Cl G	–	2.0	8.0	µg/L	<100	<0.41	lb/d
Total Residual Chlorine	6/2/10	Field	–	Field Measurement	–	2.0	8.0	µg/L	<2.4	<0.0099	lb/d
Total Residual Chlorine	6/3/10	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	6/4/10	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
Total Residual Chlorine	6/17/10	Field	–	Field Measurement	–	2.0	8.0	µg/L	<1.2	<0.0049	lb/d
pH	7/15/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.1	–	–
pH	7/29/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.1	–	–
pH	8/11/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.3	–	–
pH	8/25/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.3	–	–
pH	9/8/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.2	–	–

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010
Mission Valley Terminal
San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002 / 001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Inorganics											
pH	9/22/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.2	–	–
pH	10/6/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.2	–	–
pH	10/20/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.3	–	–
pH	11/4/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	6.8	–	–
pH	12/1/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.5	–	–
pH	12/15/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.3	–	–
pH	12/29/09	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.5	–	–
pH	1/13/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.5	–	–
pH	1/26/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.5	–	–
pH	2/9/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.6	–	–
pH	2/23/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.5	–	–
pH	3/9/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.6	–	–
pH	3/23/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.7	–	–
pH	4/6/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.2	–	–
pH	4/20/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.1	–	–
pH	5/4/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.2	–	–
pH	5/19/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.3	–	–
pH	6/15/10	Field	–	Field Measurement	6.5	–	8.5	s.u.	7.3	–	–
Turbidity	7/15/09	Test Am.	ISG1246-01	EPA 180.1	–	–	<1.0	NTU	<1.0	–	–
Turbidity	8/11/09	Test Am.	ISH0881-02	EPA 180.1	–	–	1.3	NTU	<1.0	–	–
Turbidity	9/8/09	Test Am.	ISI0620-01	EPA 180.1	–	–	<1.0	NTU	<1.0	–	–
Turbidity	10/6/09	Test Am.	ISJ0412-01	EPA 180.1	–	–	<1.0	NTU	<1.0	–	–
Turbidity	11/4/09	Test Am.	ISK0491-01	EPA 180.1	–	–	<1.0	NTU	<1.0	–	–
Turbidity	12/1/09	Test Am.	ISI0127-01	EPA 180.1	–	–	<1.0	NTU	<1.0	–	–
Turbidity	1/13/10	Test Am.	ITA0910-01	EPA 180.1	–	–	<1.0	NTU	<1.0	–	–
Turbidity	2/9/10	Test Am.	ITB1080-01	EPA 180.1	–	–	1.4	NTU	<1.0	–	–
Turbidity	3/9/10	Test Am.	ITC0999-01	EPA 180.1	–	–	2.5	NTU	<1.0	–	–
Turbidity	4/6/10	Test Am.	ITD0395-01	EPA 180.1	–	–	3.4	NTU	<1.0	–	–
Turbidity	5/4/10	Test Am.	ITE0182-01	EPA 180.1	–	–	<1.0	NTU	1.0	–	–
Turbidity	6/1/10	Test Am.	ITF0008-01	EPA 180.1	–	–	<1.0	NTU	<1.0	–	–
Phosphorus	7/15/09	Test Am.	ISG1234-01	EPA 365.3	–	0.10	0.20	mg/L	<0.050	<0.21	lb/d
Phosphorus	12/9/09	Test Am.	ISL1162-01	EPA 365.3	–	0.10	0.20	mg/L	0.10	0.41	lb/d
Phosphorus	1/13/10	Test Am.	ITA0909-01	EPA 365.3	–	0.10	0.20	mg/L	0.054	0.22	lb/d
Phosphorus	4/6/10	Test Am.	ITD0439-01	EPA 365.3	–	0.10	0.20	mg/L	<0.050	<0.21	lb/d
Settleable Solids	7/15/09	Test Am.	ISG1234-01	EPA 160.5	–	0.10	0.20	ml/L/hr	<0.10	–	–
Settleable Solids	12/9/09	Test Am.	ISL1162-01	EPA 160.5	–	0.10	0.20	ml/L/hr	0.10	–	–
Settleable Solids	1/13/10	Test Am.	ITA0909-01	EPA 160.5	–	0.10	0.20	ml/L/hr	<0.10	–	–
Settleable Solids	4/6/10	Test Am.	ITD0439-01	SM2540F	–	0.10	0.20	ml/L	<0.10	–	–
Total Suspended Solids	7/15/09	Test Am.	ISG1234-01	EPA 160.2	–	30	50	mg/L	<10	<41	lb/d
Total Suspended Solids	12/9/09	Test Am.	ISL1162-01	EPA 160.2	–	30	50	mg/L	21	87	lb/d
Total Suspended Solids	1/13/10	Test Am.	ITA0909-01	EPA 160.2	–	30	50	mg/L	<10	<41	lb/d
Total Suspended Solids	4/6/10	Test Am.	ITD0439-01	SM 2540D	–	30	50	mg/L	<10	<41	lb/d
Lead	7/15/09	Test Am.	ISG1234-01	EPA 6020-Diss	–	28	720	µg/L	<1.0	<0.0041	lb/d
Lead	12/9/09	Test Am.	ISL1162-01	EPA 6020-Diss	–	24	611	µg/L	<1.0	<0.0041	lb/d
Lead	1/13/10	Test Am.	ITA0909-01	EPA 6020-Diss	–	45	1,151	µg/L	<1.0	<0.0041	lb/d
Lead	4/6/10	Test Am.	ITD0439-01	EPA 6020	–	19	496	µg/L	<1.0	<0.0041	lb/d
Dissolved Sulfide	7/15/09	Test Am.	ISG1235-01	SM4500-S D	–	–	–	mg/L	<0.10	<0.41	lb/d

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002 / 001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Inorganics:											
Dissolved Sulfide	1/13/10	Test Am.	ITA0906-01	SM4500-S D	–	–	–	mg/L	<0.10	<0.41	lb/d
Hydrogen Sulfide	7/15/09	Test Am.	ISG1235-01	SM4500-S, F	–	0.0020	0.010	mg/L	<0.10	<0.41	lb/d
Hydrogen Sulfide	1/13/10	Test Am.	ITA0906-01	SM4500-S, F	–	0.0020	0.010	mg/L	<0.10	<0.41	lb/d
Tributyltin	7/15/09	Enviromat	ISG1235-01	GC - FPD	–	–	–	µg/L	<0.0050	<0.000021	lb/d
Arsenic	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	–	150	340	µg/L	4.0	0.016	lb/d
Arsenic	1/13/10	Test Am.	ITA0906-01	EPA 6020-Diss	–	150	340	µg/L	3.0	0.012	lb/d
Cadmium	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	–	11	44	µg/L	<1.0	<0.0041	lb/d
Cadmium	1/13/10	Test Am.	ITA0906-01	EPA 6020-Diss	–	15	66	µg/L	<1.0	<0.0041	lb/d
Chromium VI	7/15/09	Test Am.	ISG1235-01	EPA 7199	–	0.011	0.016	mg/L	<0.0020	<0.0082	lb/d
Chromium VI	1/13/10	Test Am.	ITA0906-01	EPA 7199	–	0.011	0.016	mg/L	<0.0020	<0.0082	lb/d
Copper	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	–	55	99	µg/L	2.5	0.010	lb/d
Copper	1/13/10	Test Am.	ITA0906-01	EPA 6020-Diss	–	75	140	µg/L	1.7	0.0070	lb/d
Mercury	7/15/09	Test Am.	ISG1235-01	EPA 7470A	–	0.051	–	µg/L	<0.20	<0.00082	lb/d
Mercury	1/13/10	Test Am.	ITA0906-01	EPA 7470A	–	0.051	–	µg/L	<0.20	<0.00082	lb/d
Nickel	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	–	312	2,805	µg/L	6.3	0.026	lb/d
Nickel	1/13/10	Test Am.	ITA0906-01	EPA 6020-Diss	–	426	3,832	µg/L	3.7	0.015	lb/d
Silver	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	–	–	131	µg/L	<1.0	<0.0041	lb/d
Silver	1/13/10	Test Am.	ITA0906-01	EPA 6020-Diss	–	–	248	µg/L	<1.0	<0.0041	lb/d
Zinc	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	–	710	704	µg/L	<10	<0.041	lb/d
Zinc	1/13/10	Test Am.	ITA0906-01	EPA 6020-Diss	–	970	962	µg/L	22	0.091	lb/d
Cyanide	7/15/09	Test Am.	ISG1235-01	SM4500CN-E	–	5.2	22	µg/L	<25	<0.10	lb/d
Cyanide	1/13/10	Test Am.	ITA0906-01	SM4500CN-E	–	5.2	22	µg/L	<25	<0.10	lb/d
Dissolved Oxygen	7/15/09	Field	–	Field Measurement	5.0	–	–	mg/L	7.9	33	lb/d
Dissolved Oxygen	7/29/09	Field	–	Field Measurement	5.0	–	–	mg/L	8.0	33	lb/d
Dissolved Oxygen	8/11/09	Field	–	Field Measurement	5.0	–	–	mg/L	7.9	33	lb/d
Dissolved Oxygen	8/25/09	Field	–	Field Measurement	5.0	–	–	mg/L	7.3	30	lb/d
Dissolved Oxygen	9/8/09	Field	–	Field Measurement	5.0	–	–	mg/L	8.0	33	lb/d
Dissolved Oxygen	9/22/09	Field	–	Field Measurement	5.0	–	–	mg/L	8.3	34	lb/d
Dissolved Oxygen	10/6/09	Field	–	Field Measurement	5.0	–	–	mg/L	8.0	33	lb/d
Dissolved Oxygen	10/20/09	Field	–	Field Measurement	5.0	–	–	mg/L	7.9	33	lb/d
Dissolved Oxygen	11/4/09	Field	–	Field Measurement	5.0	–	–	mg/L	5.6	23	lb/d
Dissolved Oxygen	11/23/09	Field	–	Field Measurement	5.0	–	–	mg/L	8.8	36	lb/d
Dissolved Oxygen	12/1/09	Field	–	Field Measurement	5.0	–	–	mg/L	8.8	36	lb/d
Dissolved Oxygen	12/15/09	Field	–	Field Measurement	5.0	–	–	mg/L	8.8	36	lb/d
Dissolved Oxygen	12/29/09	Field	–	Field Measurement	5.0	–	–	mg/L	9.1	38	lb/d
Dissolved Oxygen	1/13/10	Field	–	Field Measurement	5.0	–	–	mg/L	9.5	39	lb/d
Dissolved Oxygen	1/26/10	Field	–	Field Measurement	5.0	–	–	mg/L	8.9	37	lb/d
Dissolved Oxygen	2/9/10	Field	–	Field Measurement	5.0	–	–	mg/L	9.5	39	lb/d
Dissolved Oxygen	2/23/10	Field	–	Field Measurement	5.0	–	–	mg/L	9.5	39	lb/d
Dissolved Oxygen	3/9/10	Field	–	Field Measurement	5.0	–	–	mg/L	9.2	38	lb/d
Dissolved Oxygen	3/23/10	Field	–	Field Measurement	5.0	–	–	mg/L	9.1	38	lb/d
Dissolved Oxygen	4/6/10	Field	–	Field Measurement	5.0	–	–	mg/L	8.2	34	lb/d
Dissolved Oxygen	4/20/10	Field	–	Field Measurement	5.0	–	–	mg/L	9.1	37	lb/d
Dissolved Oxygen	5/4/10	Field	–	Field Measurement	5.0	–	–	mg/L	8.9	37	lb/d
Dissolved Oxygen	5/19/10	Field	–	Field Measurement	5.0	–	–	mg/L	8.7	36	lb/d
Dissolved Oxygen	6/15/10	Field	–	Field Measurement	5.0	–	–	mg/L	8.5	35	lb/d
Antimony	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	–	4,300	–	µg/L	<1.0	<0.0041	lb/d

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002 / 001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Inorganics											
Antimony	1/13/10	Test Am.	ITA0906-01	EPA 6020-Diss	--	4,300	--	µg/L	<1.0	<0.0041	lb/d
Beryllium	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	--	--	--	µg/L	<1.0	<0.0041	lb/d
Beryllium	1/13/10	Test Am.	ITA0906-01	EPA 6020-Diss	--	--	--	µg/L	<1.0	<0.0041	lb/d
Chromium	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	--	1,007	3,105	µg/L	<2.0	<0.0082	lb/d
Chromium	1/13/10	Test Am.	ITA0906-01	EPA 6020-Diss	--	1,362	4,200	µg/L	<2.0	<0.0082	lb/d
Selenium	7/15/09	Frontier	0907126-01	FGS-055	--	5.0	--	µg/L	1.5	0.0062	lb/d
Selenium	7/15/09	Frontier	0907127-01	FGS-054	--	5.0	--	µg/L	1.5	0.0061	lb/d
Thallium	7/15/09	Test Am.	ISG1235-01	EPA 6020-Diss	--	6.3	--	µg/L	<1.0	<0.0041	lb/d
Thallium	1/13/10	Test Am.	ITA0906-01	EPA 6020	--	6.3	--	µg/L	<1.0	<0.0041	lb/d
Iron, Dissolved	7/15/09	Test Am.	ISG1235-01	EPA 6010B-Diss	--	--	0.30	mg/L	<0.040	<0.16	lb/d
Sodium	7/15/09	Test Am.	ISG1235-01	EPA 6010B-Diss	--	--	60,000	mg/L	370	1,526	lb/d
Sodium	1/13/10	Test Am.	ITA0906-01	EPA 6010B-Diss	--	--	60,000	mg/L	350	1,443	lb/d
Surfactants (MBAS)	7/15/09	Test Am.	ISG1235-01	SM5540-C	--	--	0.50	mg/L	<0.10	<0.41	lb/d
Surfactants (MBAS)	1/13/10	Test Am.	ITA0906-01	SM5540-C	--	--	0.50	mg/L	<0.10	<0.41	lb/d
Fluoride	7/15/09	Test Am.	ISG1235-01	EPA 300.0	--	--	1.0	mg/L	<0.50	<2.1	lb/d
Fluoride	1/13/10	Test Am.	ITA0906-01	EPA 300.0	--	--	1.0	mg/L	<0.50	<2.1	lb/d
Hardness (as CaCO3)	7/15/09	Test Am.	ISG1246-01	EPA 130.2	--	--	--	mg/L	770	3,176	lb/d
Hardness (as CaCO3)	8/11/09	Test Am.	ISH0881-02	EPA 130.2	--	--	--	mg/L	830	3,423	lb/d
Hardness (as CaCO3)	9/8/09	Test Am.	ISI0620-01	EPA 130.2	--	--	--	mg/L	880	3,629	lb/d
Hardness (as CaCO3)	10/6/09	Test Am.	ISJ0412-01	EPA 130.2	--	--	--	mg/L	940	3,877	lb/d
Hardness (as CaCO3)	11/4/09	Test Am.	ISK0491-01	EPA 130.2	--	--	--	mg/L	880	3,629	lb/d
Hardness (as CaCO3)	12/1/09	Test Am.	ISI0127-01	EPA 130.2	--	--	--	mg/L	860	3,547	lb/d
Hardness (as CaCO3)	1/13/10	Test Am.	ITA0910-01	EPA 130.2	--	--	--	mg/L	740	3,052	lb/d
Hardness (as CaCO3)	2/9/10	Test Am.	ITB1080-01	SM2340C	--	--	--	mg/L	880	3,629	lb/d
Hardness (as CaCO3)	3/9/10	Test Am.	ITC0999-01	SM2340C	--	--	--	mg/L	900	3,712	lb/d
Hardness (as CaCO3)	4/6/10	Test Am.	ITD0395-01	SM2340C	--	--	--	mg/L	870	3,588	lb/d
Hardness (as CaCO3)	5/4/10	Test Am.	ITE0182-01	SM2340C	--	--	--	mg/L	920	3,794	lb/d
Hardness (as CaCO3)	6/1/10	Test Am.	ITF0008-01	SM2340C	--	--	--	mg/L	820	3,382	lb/d
Manganese, Dissolved	7/15/09	Test Am.	ISG1246-01	EPA 200.8-Diss	--	--	1.0	mg/L	0.014	0.058	lb/d
Manganese, Dissolved	8/27/09	Test Am.	ISH2378-01	EPA 6020-Diss	--	--	1.0	mg/L	0.0035	0.014	lb/d
Manganese, Dissolved	9/8/09	Test Am.	ISI0620-01	EPA 200.8-Diss	--	--	1.0	mg/L	0.016	0.066	lb/d
Manganese, Dissolved	10/6/09	Test Am.	ISJ0412-01	EPA 6010B-Diss	--	--	1.0	mg/L	<0.020	<0.082	lb/d
Manganese, Dissolved	11/4/09	Test Am.	ISK0491-01	EPA 6020-Diss	--	--	1.0	mg/L	0.040	0.16	lb/d
Manganese, Dissolved	12/1/09	Test Am.	ISI0127-01	EPA 6020-Diss	--	--	1.0	mg/L	0.0076	0.031	lb/d
Manganese, Dissolved	1/13/10	Test Am.	ITA0910-01	EPA 6020-Diss	--	--	1.0	mg/L	0.047	0.19	lb/d
Manganese, Dissolved	2/9/10	Test Am.	ITB1080-01	EPA 6020-Diss	--	--	1.0	mg/L	0.063	0.26	lb/d
Manganese, Dissolved	3/9/10	Test Am.	ITC0999-01	EPA 6020	--	--	1.0	mg/L	0.0061	0.025	lb/d
Manganese, Dissolved	4/6/10	Test Am.	ITD0395-01	EPA 6020	--	--	1.0	mg/L	0.039	0.16	lb/d
Manganese, Dissolved	5/4/10	Test Am.	ITE0182-01	EPA 6020-Diss	--	--	1.0	mg/L	0.021	0.087	lb/d
Manganese, Dissolved	6/1/10	Test Am.	ITF0008-01	EPA 6020-Diss	--	--	1.0	mg/L	0.0081	0.033	lb/d
Total Nitrogen	7/15/09	Test Am.,N	ISG1246-01	Calculation	--	1.0	2.0	mg/L	0.22	0.90	lb/d
Total Nitrogen	8/27/09	Test Am.,N	ISH2378-01	Calculation	--	1.0	2.0	mg/L	0.39	1.6	lb/d
Total Nitrogen	9/8/09	Test Am.,N	ISI0620-01	Calculation	--	1.0	2.0	mg/L	1.1	4.6	lb/d
Total Nitrogen	9/30/09	Test Am.,N	ISJ0080-01	Calculation	--	1.0	2.0	mg/L	<0.32	<1.3	lb/d
Total Nitrogen	10/6/09	Test Am.,N	ISJ0412-01	Calculation	--	1.0	2.0	mg/L	<0.32	<1.3	lb/d
Total Nitrogen	11/4/09	Test Am.,N	ISK0491-01	Calculation	--	1.0	2.0	mg/L	<0.21	<0.87	lb/d
Total Nitrogen	12/1/09	Test Am.,N	ISI0127-01	Calculation	--	1.0	2.0	mg/L	0.60	2.5	lb/d

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010
Mission Valley Terminal
San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Inorganic											
Total Nitrogen	1/13/10	Test Am.,N	ITA0910-01RE1	Calculation	--	1.0	2.0	mg/L	0.55	2.3	lb/d
Total Nitrogen	2/9/10	Test Am.,N	ITB1080-01	Calculation	--	1.0	2.0	mg/L	0.39	1.6	lb/d
Total Nitrogen	3/9/10	Test Am.,N	ITC0999-01RE1	Calculation	--	1.0	2.0	mg/L	0.22	0.90	lb/d
Total Nitrogen	4/6/10	Test Am.,N	ITD0395-01RE1	Calculation	--	1.0	2.0	mg/L	<0.21	<0.87	lb/d
Total Nitrogen	5/4/10	Test Am.,N	ITE0182-01	Calculation	--	1.0	2.0	mg/L	<0.32	<1.3	lb/d
Total Nitrogen	6/1/10	Test Am.,N	ITF0008-01	Calculation	--	1.0	2.0	mg/L	0.21	0.86	lb/d
Biologics											
Fecal Coliforms	7/15/09	Enviromat	ISG1246-02	SM 9221 B, E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	8/11/09	Enviromat	ISH0881-01	SM 9221 B, E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	9/8/09	Enviromat	ISI0620-02	SM 9221 B, E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	10/6/09	Sierra	0910079-01	SM 9221 B,E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	11/4/09	Test Am.,O	ISK0491-01	SM9221 A,B,C,E	--	--	200	MPN/100 mL	2.0	--	--
Fecal Coliforms	12/1/09	Sierra	ISI0127-01	SM 9221 B,E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	1/13/10	Test Am.	ITA0910-02	SM9221 A,B,C,E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	2/9/10	Sierra	ITB1080-02	SM 9221E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	3/9/10	Sierra	ITC0999-01	SM 9221E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	4/6/10	Test Am.	ITD0395-02	SM9221 A,B,C,E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	5/4/10	Test Am.	ITE0182-02	SM9221 A,B,C,E	--	--	200	MPN/100 mL	<2.0	--	--
Fecal Coliforms	6/1/10	Test Am.	ITF0008-02	SM9221 A,B,C,E	--	--	200	MPN/100 mL	<2.0	--	--
Total Coliforms	7/15/09	Enviromat	ISG1246-02	SM 9221 B, E	--	--	1,000	MPN/100 mL	2.0	--	--
Total Coliforms	8/11/09	Enviromat	ISH0881-01	SM 9221 B, E	--	--	1,000	MPN/100 mL	<2.0	--	--
Total Coliforms	9/8/09	Enviromat	ISI0620-02	SM 9221 B, E	--	--	1,000	MPN/100 mL	<2.0	--	--
Total Coliforms	10/6/09	Sierra	0910079-01	SM 9221 B,E	--	--	1,000	MPN/100 mL	8.0	--	--
Total Coliforms	11/4/09	Test Am.,O	ISK0491-01	SM9221 A,B,C,E	--	--	1,000	MPN/100 mL	4.0	--	--
Total Coliforms	12/1/09	Sierra	ISI0127-01	SM 9221B	--	--	1,000	MPN/100 mL	<2.0	--	--
Total Coliforms	1/13/10	Test Am.	ITA0910-02	SM9221 A,B,C,E	--	--	1,000	MPN/100 mL	23	--	--
Total Coliforms	2/9/10	Sierra	ITB1080-02	SM 9221B	--	--	1,000	MPN/100 mL	<2.0	--	--
Total Coliforms	3/9/10	Sierra	ITC0999-01	SM 9221B	--	--	1,000	MPN/100 mL	<2.0	--	--
Total Coliforms	4/6/10	Test Am.	ITD0395-02	SM9221 A,B,C,E	--	--	1,000	MPN/100 mL	<2.0	--	--
Total Coliforms	5/4/10	Test Am.	ITE0182-02	SM9221 A,B,C,E	--	--	1,000	MPN/100 mL	<2.0	--	--
Total Coliforms	6/1/10	Test Am.	ITF0008-02	SM9221 A,B,C,E	--	--	1,000	MPN/100 mL	<2.0	--	--
Volatile Organic Compounds (VOCs)											
Benzene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	7/29/09	Test Am.	ISG2314-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	8/11/09	Test Am.	ISH0881-02	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	8/25/09	Test Am.	ISH2186-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	9/8/09	Test Am.	ISI0620-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	9/22/09	Test Am.	ISI1875-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	10/6/09	Test Am.	ISJ0412-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	10/20/09	Test Am.	ISJ2207-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	11/4/09	Test Am.	ISK0491-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	11/17/09	Test Am.	ISK1850-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	12/1/09	Test Am.	ISI0127-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	12/15/09	Test Am.	ISL1940-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	12/29/09	Test Am.	ISL2870-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	1/13/10	Test Am.	ITA0910-01	EPA 8260B	--	71	--	µg/L	<2.5	<0.010	lb/d
Benzene	1/26/10	Test Am.	ITA2425-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM [illegible]

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Volatile Organic Compounds (VOCs)											
Benzene	2/9/10	Test Am.	ITB1080-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	2/23/10	Test Am.	ITB2401-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	3/9/10	Test Am.	ITC0999-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	3/23/10	Test Am.	ITC2301-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	4/6/10	Test Am.	ITD0395-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	4/20/10	Test Am.	ITD1904-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	5/4/10	Test Am.	ITE0182-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	5/19/10	Test Am.	ITE1884-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	6/1/10	Test Am.	ITF0008-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Benzene	6/15/10	Test Am.	ITF1444-01	EPA 8260B	--	71	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	7/29/09	Test Am.	ISG2314-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	8/11/09	Test Am.	ISH0881-02	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	8/25/09	Test Am.	ISH2186-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	9/8/09	Test Am.	ISI0620-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	9/22/09	Test Am.	ISI1875-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	10/6/09	Test Am.	ISJ0412-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	10/20/09	Test Am.	ISJ2207-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	11/4/09	Test Am.	ISK0491-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	11/17/09	Test Am.	ISK1850-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	12/1/09	Test Am.	ISI0127-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	12/15/09	Test Am.	ISL1940-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	12/29/09	Test Am.	ISL2870-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	1/13/10	Test Am.	ITA0906-01	EPA 8260B	--	29,000	--	µg/L	<2.5	<0.010	lb/d
Ethylbenzene	1/26/10	Test Am.	ITA2425-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	2/9/10	Test Am.	ITB1080-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	2/23/10	Test Am.	ITB2401-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	3/9/10	Test Am.	ITC0999-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	3/23/10	Test Am.	ITC2301-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	4/6/10	Test Am.	ITD0395-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	4/20/10	Test Am.	ITD1904-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	5/4/10	Test Am.	ITE0182-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	5/19/10	Test Am.	ITE1884-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	6/1/10	Test Am.	ITF0008-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Ethylbenzene	6/15/10	Test Am.	ITF1444-01	EPA 8260B	--	29,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	7/15/09	Test Am.	ISG1246-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	7/29/09	Test Am.	ISG2314-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	8/11/09	Test Am.	ISH0881-02	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	8/25/09	Test Am.	ISH2186-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	9/8/09	Test Am.	ISI0620-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	9/22/09	Test Am.	ISI1875-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	10/6/09	Test Am.	ISJ0412-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	10/20/09	Test Am.	ISJ2207-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	11/4/09	Test Am.	ISK0491-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	11/17/09	Test Am.	ISK1850-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	12/1/09	Test Am.	ISI0127-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d
Toluene	12/15/09	Test Am.	ISL1940-01	EPA 8260B	--	200,000	--	µg/L	<0.50	<0.0021	lb/d

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Volatile Organic Compounds (VOCs)											
Toluene	12/29/09	Test Am.	ISL2870-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	1/13/10	Test Am.	ITA0910-01	EPA 8260B	–	200,000	–	µg/L	<2.5	<0.010	lb/d
Toluene	1/26/10	Test Am.	ITA2425-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	2/9/10	Test Am.	ITB1080-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	2/23/10	Test Am.	ITB2401-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	3/9/10	Test Am.	ITC0999-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	3/23/10	Test Am.	ITC2301-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	4/6/10	Test Am.	ITD0395-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	4/20/10	Test Am.	ITD1904-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	5/4/10	Test Am.	ITE0182-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	5/19/10	Test Am.	ITE1884-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	6/1/10	Test Am.	ITF0008-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Toluene	6/15/10	Test Am.	ITF1444-01	EPA 8260B	–	200,000	–	µg/L	<0.50	<0.0021	lb/d
Xylene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	7/29/09	Test Am.	ISG2314-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	8/11/09	Test Am.	ISH0881-02	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	8/25/09	Test Am.	ISH2186-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	9/8/09	Test Am.	ISI0620-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	9/22/09	Test Am.	ISI1875-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	10/6/09	Test Am.	ISJ0412-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	10/20/09	Test Am.	ISJ2207-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	11/4/09	Test Am.	ISK0491-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	11/17/09	Test Am.	ISK1850-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	12/1/09	Test Am.	ISL0127-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	12/15/09	Test Am.	ISL1940-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	12/29/09	Test Am.	ISL2870-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	1/13/10	Test Am.	ITA0910-01	EPA 8260B	–	–	5.0	µg/L	<5.5	<0.023	lb/d
Xylene	1/26/10	Test Am.	ITA2425-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	2/9/10	Test Am.	ITB1080-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	2/23/10	Test Am.	ITB2401-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	3/9/10	Test Am.	ITC0999-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	3/23/10	Test Am.	ITC2301-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	4/6/10	Test Am.	ITD0395-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	4/20/10	Test Am.	ITD1904-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	5/4/10	Test Am.	ITE0182-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	5/19/10	Test Am.	ITE1884-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	6/1/10	Test Am.	ITF0008-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Xylene	6/15/10	Test Am.	ITF1444-01	EPA 8260B	–	–	5.0	µg/L	<1.5	<0.0062	lb/d
Methyl-tert-butyl Ether (MTBE)	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	7/29/09	Test Am.	ISG2314-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	8/11/09	Test Am.	ISH0881-02	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	8/25/09	Test Am.	ISH2186-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	9/8/09	Test Am.	ISI0620-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	9/22/09	Test Am.	ISI1875-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010
Mission Valley Terminal
San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Volatile Organic Compounds (VOCs)											
Methyl-tert-butyl Ether (MTBE)	10/6/09	Test Am.	ISJ0412-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	10/20/09	Test Am.	ISJ2207-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	11/4/09	Test Am.	ISK0491-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	11/17/09	Test Am.	ISK1850-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	12/1/09	Test Am.	ISI0127-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	12/15/09	Test Am.	ISL1940-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	12/29/09	Test Am.	ISL2870-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	1/13/10	Test Am.	ITA0910-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	1/26/10	Test Am.	ITA2425-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	2/9/10	Test Am.	ITB1080-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	2/23/10	Test Am.	ITB2401-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	3/9/10	Test Am.	ITC0999-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	3/23/10	Test Am.	ITC2301-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	4/6/10	Test Am.	ITD0395-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	4/20/10	Test Am.	ITD1904-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	5/4/10	Test Am.	ITE0182-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	5/19/10	Test Am.	ITE1884-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	6/1/10	Test Am.	ITF0008-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
Methyl-tert-butyl Ether (MTBE)	6/15/10	Test Am.	ITF1444-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
TPH (C6-C40)	7/15/09	Test Am.	ISG1246-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	8/11/09	Test Am.	ISH0881-02	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	9/8/09	Test Am.	ISI0620-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	10/6/09	Test Am.	ISJ0412-01	EPA 8015B	–	–	0.50	mg/L	<0.50	<2.1	lb/d
TPH (C6-C40)	11/4/09	Test Am.	ISK0491-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	12/1/09	Test Am.	ISI0127-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	1/13/10	Test Am.	ITA0910-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	2/9/10	Test Am.	ITB1080-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	3/9/10	Test Am.	ITC0999-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	4/6/10	Test Am.	ITD0395-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	5/4/10	Test Am.	ITE0182-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
TPH (C6-C40)	6/1/10	Test Am.	ITF0008-01	EPA 8015B	–	–	0.50	mg/L	<0.47	<1.9	lb/d
1,1,2,2-Tetrachloroethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	11	–	μg/L	<1.0	<0.0041	lb/d
1,1,2,2-Tetrachloroethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	11	–	μg/L	<3.0	<0.012	lb/d
1,1,1-Trichloroethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	μg/L	<1.0	<0.0041	lb/d
1,1,1-Trichloroethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	–	μg/L	<3.0	<0.012	lb/d
1,1,2-Trichloroethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	42	–	μg/L	<1.0	<0.0041	lb/d

September 14, 2011
Item No. 7
Supporting Document No. 3

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010
Mission Valley Terminal
San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Volatile Organic Compounds (VOCs)											
1,1,2-Trichloroethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	42	–	µg/L	<3.0	<0.012	lb/d
1,2-Dichloroethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	99	–	µg/L	<0.50	<0.0021	lb/d
1,2-Dichloroethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	99	–	µg/L	<2.5	<0.010	lb/d
Tetrachloroethene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	8.9	–	µg/L	<1.0	<0.0041	lb/d
Tetrachloroethene	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	8.9	–	µg/L	<3.0	<0.012	lb/d
Trichloroethene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	81	–	µg/L	<1.0	<0.0041	lb/d
Trichloroethene	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	81	–	µg/L	<3.0	<0.012	lb/d
Vinyl chloride	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	525	–	µg/L	<0.50	<0.0021	lb/d
Vinyl chloride	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	525	–	µg/L	<5.5	<0.023	lb/d
Carbon tetrachloride	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	4.4	–	µg/L	<0.50	<0.0021	lb/d
Carbon tetrachloride	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	4.4	–	µg/L	<5.5	<0.023	lb/d
Acrolein	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	780	–	µg/L	<50	<0.21	lb/d
Acrolein	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	780	–	µg/L	<50	<0.21	lb/d
Acrylonitrile	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	0.66	–	µg/L	<50	<0.21	lb/d
Acrylonitrile	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	0.66	–	µg/L	<50	<0.21	lb/d
Bromoform	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	360	–	µg/L	<1.0	<0.0041	lb/d
Bromoform	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	360	–	µg/L	<6.0	<0.025	lb/d
Chlorobenzene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	21,000	–	µg/L	<1.0	<0.0041	lb/d
Chlorobenzene	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	21,000	–	µg/L	<3.0	<0.012	lb/d
Dibromochloromethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	34	–	µg/L	<1.0	<0.0041	lb/d
Dibromochloromethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	34	–	µg/L	<3.0	<0.012	lb/d
Chloroethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Chloroethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	–	µg/L	<6.0	<0.025	lb/d
2-Chloroethyl vinyl ether	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	µg/L	<5.0	<0.021	lb/d
2-Chloroethyl vinyl ether	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	–	µg/L	<5.0	<0.021	lb/d
Chloroform	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Chloroform	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	–	µg/L	<3.0	<0.012	lb/d
Bromodichloromethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	46	–	µg/L	<1.0	<0.0041	lb/d
Bromodichloromethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	46	–	µg/L	<3.0	<0.012	lb/d
1,1-Dichloroethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
1,1-Dichloroethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	–	µg/L	<3.0	<0.012	lb/d
1,1-Dichloroethene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	3.2	–	µg/L	<1.0	<0.0041	lb/d
1,1-Dichloroethene	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	3.2	–	µg/L	<6.0	<0.025	lb/d
1,2-Dichloropropane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	39	–	µg/L	<1.0	<0.0041	lb/d
1,2-Dichloropropane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	39	–	µg/L	<3.0	<0.012	lb/d
1,3-Dichloropropylene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	1,700	–	µg/L	<1.0	<0.0041	lb/d
1,3-Dichloropropylene	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	1,700	–	µg/L	<5.0	<0.021	lb/d
Bromomethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	4,000	–	µg/L	<1.0	<0.0041	lb/d
Bromomethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	4,000	–	µg/L	<6.0	<0.025	lb/d
Chloromethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Chloromethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	–	µg/L	<6.0	<0.025	lb/d
Methylene chloride	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	1,600	–	µg/L	<5.0	<0.021	lb/d
Methylene chloride	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	1,600	–	µg/L	<10	<0.041	lb/d
trans-1,2-Dichloroethene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	140,000	–	µg/L	<1.0	<0.0041	lb/d
trans-1,2-Dichloroethene	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	140,000	–	µg/L	<3.0	<0.012	lb/d
1,2,4-Trichlorobenzene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	10	µg/L	<21	<0.086	lb/d
1,2,4-Trichlorobenzene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	10	µg/L	<21	<0.086	lb/d

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010
Mission Valley Terminal
San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002 / 001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Volatile Organic Compounds (VOCs)											
1,2-Dibromo -3-chloropropane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	0.20	µg/L	<5.0	<0.021	lb/d
1,2-Dibromo -3-chloropropane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	0.20	µg/L	<5.0	<0.021	lb/d
1,2-Dibromoethane (EDB)	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	0.020	µg/L	<1.0	<0.0041	lb/d
1,2-Dibromoethane (EDB)	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	0.020	µg/L	<1.0	<0.0041	lb/d
Bromobenzene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Bromobenzene	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Bromochloromethane	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
Bromochloromethane	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
cis-1,2-Dichloroethene	7/15/09	Test Am.	ISG1235-01	EPA 8260B	–	–	–	µg/L	<1.0	<0.0041	lb/d
cis-1,2-Dichloroethene	1/13/10	Test Am.	ITA0906-01	EPA 8260B	–	–	–	µg/L	<3.0	<0.012	lb/d
Bases/Neutrals											
Bases/Neutrals	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	10	µg/L	<571	<2.4	lb/d
Bases/Neutrals	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	10	µg/L	<558	<2.3	lb/d
Acenaphthene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	2,700	–	µg/L	<9.4	<0.039	lb/d
Acenaphthene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	2,700	–	µg/L	<9.4	<0.039	lb/d
Acenaphthylene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
Acenaphthylene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
Anthracene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	110,000	–	µg/L	<9.4	<0.039	lb/d
Anthracene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	110,000	–	µg/L	<9.4	<0.039	lb/d
Benzidine	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	0.00054	–	µg/L	<19	<0.078	lb/d
Benzidine	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	0.00054	–	µg/L	<19	<0.078	lb/d
Benzo(a)anthracene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	0.049	–	µg/L	<9.4	<0.039	lb/d
Benzo(a)anthracene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	0.049	–	µg/L	<9.4	<0.039	lb/d
Benzo(a)pyrene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	0.049	–	µg/L	<9.4	<0.039	lb/d
Benzo(a)pyrene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	0.049	–	µg/L	<9.4	<0.039	lb/d
Benzo(b)fluoranthene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	0.049	–	µg/L	<9.4	<0.039	lb/d
Benzo(b)fluoranthene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	0.049	–	µg/L	<9.4	<0.039	lb/d
Benzo(g,h,i)perylene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
Benzo(g,h,i)perylene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
Benzo(k)fluoranthene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	0.049	–	µg/L	<9.4	<0.039	lb/d
Benzo(k)fluoranthene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	0.049	–	µg/L	<9.4	<0.039	lb/d
Bis(2-chloroethoxy)methane	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
Bis(2-chloroethoxy)methane	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
Bis(2-chloroethyl)ether	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	1.4	–	µg/L	<9.4	<0.039	lb/d
Bis(2-chloroethyl)ether	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	1.4	–	µg/L	<9.4	<0.039	lb/d
Bis(2-chloroisopropyl)ether	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	170,000	–	µg/L	<9.4	<0.039	lb/d
Bis(2-chloroisopropyl)ether	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	170,000	–	µg/L	<9.4	<0.039	lb/d
Bis(2-ethylhexyl)phthalate	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	5.9	–	µg/L	<47	<0.19	lb/d
Bis(2-ethylhexyl)phthalate	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	5.9	–	µg/L	<47	<0.19	lb/d
4-Bromophenyl phenyl ether	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
4-Bromophenyl phenyl ether	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
Butyl benzyl phthalate	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	5,200	–	µg/L	<19	<0.078	lb/d
Butyl benzyl phthalate	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	5,200	–	µg/L	<19	<0.078	lb/d
2-Chloronaphthalene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	4,300	–	µg/L	<9.4	<0.039	lb/d
2-Chloronaphthalene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	4,300	–	µg/L	<9.4	<0.039	lb/d
4-Chlorophenyl phenyl ether	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Bases/Neutrals											
4-Chlorophenyl phenyl ether	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	--	--	µg/L	<9.4	<0.039	lb/d
Chrysene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	0.049	--	µg/L	<9.4	<0.039	lb/d
Chrysene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	0.049	--	µg/L	<9.4	<0.039	lb/d
Dibenz(a,h)anthracene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	0.049	--	µg/L	<19	<0.078	lb/d
Dibenz(a,h)anthracene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	0.049	--	µg/L	<19	<0.078	lb/d
1,2-Dichlorobenzene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	17,000	--	µg/L	<10	<0.043	lb/d
1,2-Dichlorobenzene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	17,000	--	µg/L	<12	<0.051	lb/d
1,3-Dichlorobenzene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	2,600	--	µg/L	<10	<0.043	lb/d
1,3-Dichlorobenzene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	2,600	--	µg/L	<12	<0.051	lb/d
1,4-Dichlorobenzene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	2,600	--	µg/L	<10	<0.043	lb/d
1,4-Dichlorobenzene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	2,600	--	µg/L	<12	<0.051	lb/d
3,3-Dichlorobenzidine	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	0.077	--	µg/L	<19	<0.078	lb/d
Diethyl phthalate	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	120,000	--	µg/L	<9.4	<0.039	lb/d
Diethyl phthalate	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	120,000	--	µg/L	<9.4	<0.039	lb/d
Dimethyl phthalate	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	2,900,000	--	µg/L	<9.4	<0.039	lb/d
Dimethyl phthalate	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	2,900,000	--	µg/L	<9.4	<0.039	lb/d
Di-n-butyl phthalate	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	12,000	--	µg/L	<19	<0.078	lb/d
Di-n-butyl phthalate	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	12,000	--	µg/L	<19	<0.078	lb/d
2,4-Dinitrotoluene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	9.1	--	µg/L	<9.4	<0.039	lb/d
2,4-Dinitrotoluene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	9.1	--	µg/L	<9.4	<0.039	lb/d
2,6-Dinitrotoluene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	--	--	µg/L	<9.4	<0.039	lb/d
2,6-Dinitrotoluene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	--	--	µg/L	<9.4	<0.039	lb/d
Di-n-octyl phthalate	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	--	--	µg/L	<19	<0.078	lb/d
Di-n-octyl phthalate	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	--	--	µg/L	<19	<0.078	lb/d
1,2-Diphenylhydrazine/Azo benzene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	0.54	--	µg/L	<19	<0.078	lb/d
1,2-Diphenylhydrazine/Azo benzene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	0.54	--	µg/L	<19	<0.078	lb/d
Fluoranthene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	370	--	µg/L	<9.4	<0.039	lb/d
Fluoranthene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	370	--	µg/L	<9.4	<0.039	lb/d
Fluorene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	14,000	--	µg/L	<9.4	<0.039	lb/d
Fluorene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	14,000	--	µg/L	<9.4	<0.039	lb/d
Hexachlorobenzene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	0.00077	--	µg/L	<9.4	<0.039	lb/d
Hexachlorobenzene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	0.00077	--	µg/L	<9.4	<0.039	lb/d
Hexachlorobutadiene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	50	--	µg/L	<10	<0.043	lb/d
Hexachlorobutadiene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	50	--	µg/L	<10	<0.043	lb/d
Hexachlorocyclopentadiene	7/25/09	Test Am.	ISG1235-01	EPA 8270C	--	17,000	--	µg/L	<19	<0.078	lb/d
Hexachlorocyclopentadiene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	17,000	--	µg/L	<19	<0.078	lb/d
Hexachloroethane	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	8.9	--	µg/L	<9.4	<0.039	lb/d
Hexachloroethane	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	8.9	--	µg/L	<9.4	<0.039	lb/d
Indeno(1,2,3-cd)pyrene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	0.049	--	µg/L	<19	<0.078	lb/d
Indeno(1,2,3-cd)pyrene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	0.049	--	µg/L	<19	<0.078	lb/d
Isophorone	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	600	--	µg/L	<9.4	<0.039	lb/d
Isophorone	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	600	--	µg/L	<9.4	<0.039	lb/d
Naphthalene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	--	--	µg/L	<10	<0.043	lb/d
Naphthalene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	--	--	µg/L	<10	<0.043	lb/d
Nitrobenzene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	--	1,900	--	µg/L	<19	<0.078	lb/d
Nitrobenzene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	--	1,900	--	µg/L	<19	<0.078	lb/d

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002 / 001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Base/Neutrals											
n-Nitrosodimethylamine	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	8.1	–	µg/L	<19	<0.078	lb/d
n-Nitrosodimethylamine	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	8.1	–	µg/L	<19	<0.078	lb/d
N-Nitroso-di-n-propylamine	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	1.4	–	µg/L	<9.4	<0.039	lb/d
N-Nitroso-di-n-propylamine	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	1.4	–	µg/L	<9.4	<0.039	lb/d
n-Nitrosodiphenylamine	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	16	–	µg/L	<9.4	<0.039	lb/d
n-Nitrosodiphenylamine	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	16	–	µg/L	<9.4	<0.039	lb/d
Phenanthrene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
Phenanthrene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
Pyrene	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	11,000	–	µg/L	<9.4	<0.039	lb/d
Pyrene	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	11,000	–	µg/L	<9.4	<0.039	lb/d
2-Nitroaniline	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<19	<0.078	lb/d
2-Nitroaniline	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<19	<0.078	lb/d
Chlorinated Phenols											
Chlorinated Phenolics	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	10	µg/L	<76	<0.31	lb/d
Chlorinated Phenolics	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	10	µg/L	<76	<0.31	lb/d
2-Chlorophenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	400	–	µg/L	<9.4	<0.039	lb/d
2-Chlorophenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	400	–	µg/L	<9.4	<0.039	lb/d
2,4-Dichlorophenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	790	–	µg/L	<9.4	<0.039	lb/d
2,4-Dichlorophenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	790	–	µg/L	<9.4	<0.039	lb/d
4-Chloro-3-methylphenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<19	<0.078	lb/d
4-Chloro-3-methylphenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<19	<0.078	lb/d
Pentachlorophenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	7.3	–	µg/L	<19	<0.078	lb/d
Pentachlorophenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	11	–	µg/L	<19	<0.078	lb/d
2,4,6-Trichlorophenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	6.5	–	µg/L	<19	<0.078	lb/d
2,4,6-Trichlorophenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	6.5	–	µg/L	<19	<0.078	lb/d
2,4,5-Trichlorophenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	10	µg/L	<19	<0.078	lb/d
2,4,5-Trichlorophenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	10	µg/L	<19	<0.078	lb/d
Non Chlorinated Phenols											
Non-Chlorinated Phenolics	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<95	<0.39	lb/d
Non-Chlorinated Phenolics	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<95	<0.39	lb/d
2,4-Dimethylphenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	2,300	–	µg/L	<19	<0.078	lb/d
2,4-Dimethylphenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	2,300	–	µg/L	<19	<0.078	lb/d
4,6-Dinitro-2-methylphenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	765	–	µg/L	<19	<0.078	lb/d
4,6-Dinitro-2-methylphenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	765	–	µg/L	<19	<0.078	lb/d
2,4-Dinitrophenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	14,000	–	µg/L	<19	<0.078	lb/d
2,4-Dinitrophenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	14,000	–	µg/L	<19	<0.078	lb/d
2-Nitrophenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
2-Nitrophenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<9.4	<0.039	lb/d
4-Nitrophenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	–	–	µg/L	<19	<0.078	lb/d
4-Nitrophenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	–	–	µg/L	<19	<0.078	lb/d
Phenol	7/15/09	Test Am.	ISG1235-01	EPA 8270C	–	4,600,000	–	µg/L	<9.4	<0.039	lb/d
Phenol	1/13/10	Test Am.	ITA0906-01	EPA 8270C	–	4,600,000	–	µg/L	<9.4	<0.039	lb/d
Dioxins											
2,3,7,8-TCDD	7/15/09	Test Am.,S	ISG1235-01	SW846 8290	–	0.014	–	pg/L	<9.4	<0.000000039	lb/d
2,3,7,8-TCDD	1/13/10	Test Am.,S	ITA0906-01	SW846 8290	–	0.014	–	pg/L	<9.7	<0.000000040	lb/d
Pesticides											
Aldrin	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	–	0.00014	3.0	µg/L	<0.10	<0.00041	lb/d
Aldrin	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	–	0.00014	3.0	µg/L	<0.094	<0.00039	lb/d

September 14, 2011
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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010
Mission Valley Terminal
San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:
CAG919002 / 001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concentration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			
Pesticides											
alpha-BHC	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.013	--	µg/L	<0.10	<0.00041	lb/d
alpha-BHC	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.013	--	µg/L	<0.094	<0.00039	lb/d
beta-BHC	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.046	--	µg/L	<0.10	<0.00041	lb/d
beta-BHC	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.046	--	µg/L	<0.094	<0.00039	lb/d
gamma-BHC (Lindane)	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.063	0.95	µg/L	<0.10	<0.00041	lb/d
gamma-BHC (Lindane)	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.063	0.95	µg/L	<0.094	<0.00039	lb/d
delta-BHC	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	--	--	µg/L	<0.20	<0.00082	lb/d
delta-BHC	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	--	--	µg/L	<0.19	<0.00078	lb/d
Chlordane	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.00059	2.4	µg/L	<1.0	<0.0041	lb/d
Chlordane	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.00059	2.4	µg/L	<0.94	<0.0039	lb/d
4,4'-DDT	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.00059	1.1	µg/L	<0.10	<0.00041	lb/d
4,4'-DDT	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.00059	1.1	µg/L	<0.094	<0.00039	lb/d
4,4'-DDE	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.00059	--	µg/L	<0.10	<0.00041	lb/d
4,4'-DDE	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.00059	--	µg/L	<0.094	<0.00039	lb/d
4,4'-DDD	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.00084	--	µg/L	<0.10	<0.00041	lb/d
4,4'-DDD	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.00084	--	µg/L	<0.094	<0.00039	lb/d
Dieldrin	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.00014	0.24	µg/L	<0.10	<0.00041	lb/d
Dieldrin	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.00014	0.24	µg/L	<0.094	<0.00039	lb/d
Endosulfan I	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.056	0.22	µg/L	<0.10	<0.00041	lb/d
Endosulfan I	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.056	0.22	µg/L	<0.094	<0.00039	lb/d
Endosulfan II	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.056	0.22	µg/L	<0.10	<0.00041	lb/d
Endosulfan II	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.056	0.22	µg/L	<0.094	<0.00039	lb/d
Endosulfan sulfate	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	240	--	µg/L	<0.20	<0.00082	lb/d
Endosulfan sulfate	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	240	--	µg/L	<0.19	<0.00078	lb/d
Endrin	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.036	0.086	µg/L	<0.10	<0.00041	lb/d
Endrin	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.036	0.086	µg/L	<0.094	<0.00039	lb/d
Endrin aldehyde	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.81	--	µg/L	<0.10	<0.00041	lb/d
Endrin aldehyde	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.81	--	µg/L	<0.094	<0.00039	lb/d
Heptachlor	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.00021	0.52	µg/L	<0.10	<0.00041	lb/d
Heptachlor	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.00021	0.52	µg/L	<0.094	<0.00039	lb/d
Heptachlor epoxide	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.00011	0.52	µg/L	<0.10	<0.00041	lb/d
Heptachlor epoxide	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.00011	0.52	µg/L	<0.094	<0.00039	lb/d
Toxaphene	7/15/09	Test Am.	ISG1235-01	EPA 3510C/8081A	--	0.00020	0.73	µg/L	<5.0	<0.021	lb/d
Toxaphene	1/13/10	Test Am.	ITA0906-01	EPA 3510C/8081A	--	0.00020	0.73	µg/L	<4.7	<0.019	lb/d
Polychlorinated Biphenyls (PCBs)	7/15/09	Test Am.	ISG1235-01	EPA 8082	--	0.00017	--	µg/L	<7.0	<0.029	lb/d
Polychlorinated Biphenyls (PCBs)	1/13/10	Test Am.	ITA0906-01	EPA 8082	--	0.00017	--	µg/L	<6.6	<0.027	lb/d
Toxicity											
Acute Toxicity	See cover letter for details										
Chronic Toxicity	See cover letter for details										

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TABLE 1: SUMMARY OF ANALYTICAL RESULTS FOR EFFLUENT SAMPLES FROM JULY 2009 TO JUNE 2010

Mission Valley Terminal

San Diego, California

Site Address:

Kinder Morgan Energy Partners
9950 San Diego Mission Road
San Diego, California 92108

Permit / Discharge No.:

CAG919002/001

PARAMETER	Sample Date	Analytical Laboratory	Lab ID	Method	Permit Limits				Quality or Concen-tration	Quantity or Loading	Units
					Min.	Ave.	Max.	Units			

Notes:
TPH (C6-C40) reported as the sum of VFH (C6-C12) and EFH (C8-C40).
Total Nitrogen reported as the calculated sum of Total Kjeldahl Nitrogen, Nitrate-N, and Nitrite-N.
Test Am. = TestAmerica - Irvine, CA.
Test Am,N = TestAmerica - Nashville, CA.
Test Am.,S = TestAmerica - Sacramento, CA.
Test Am.,O = TestAmerica - Ontario, CA.
Enviromat = Enviromatrix Analytical, Inc., San Diego, CA.
Frontier = Frontier Geosciences Inc.
Sierra = Sierra analytical, Laguna Hills, CA.
Field = Measurement collected in the field with handheld meter.
MGD = million gallons per day.
mg/L = milligrams per liter.
µg/L = micrograms per liter.
pg/L = picograms per liter.
lb/d = pounds per day.
< = Not detected above laboratory reporting limit indicated.
s.u. = standard units.
NTU = Nephelometric Turbidity Units.
ml/L/hr = milliliters per liter per hour.

Table 2
Mass Discharge Rates for Detected Constituents
Based on Treated Discharge Analytical Results from July 2009 through June 2010
Mission Valley Terminal
CM010143.0082

			Mass Discharge Rate (g/min)				Mass Loading of Stream[a] (g/min)		
Analyte	Result[b]	Units	205 gpm	350 gpm	550 gpm	875 gpm	Feb, 2005 Flow Rate	Current Flow Rate	Proposed Flow Rate
Arsenic	4	ug/l	0.003	0.005	0.008	0.013	4.0E-06	7.5E-06	8.8E-06
Copper	2.5	ug/l	0.002	0.003	0.005	0.008	2.5E-06	4.7E-06	5.5E-06
Hardness ($CaCO_3$)	940	mg/l	729	1245	1957	3113	0.95	1.76	2.06
Manganese	63	ug/l	0.049	0.083	0.131	0.209	6.4E-05	1.2E-04	1.4E-04
Nickel	6.3	ug/l	0.005	0.008	0.013	0.021	6.4E-06	1.2E-05	1.4E-05
Phosphorous	0.1	mg/L	0.078	0.132	0.208	0.331	1.0E-04	1.9E-04	2.2E-04
Total Nitrogen	1.1	mg/l	0.854	1.457	2.290	3.643	1.1E-03	2.1E-03	2.4E-03
Selenium	1.5	ug/L	0.001	0.002	0.003	0.005	1.5E-06	2.8E-06	3.3E-06
Sodium	370	mg/L	287	490	770	1226	0.37	0.69	0.81
Total Suspended Solids	21	mg/L	16	28	44	69.6	0.02	3.9E-02	4.6E-02
Settleable Solids	0.1	ml/L/hr	n	n	n	n	n	n	n
Fecal Coliforms	2	MPN/100 mL	n	n	n	n	n	n	n
Total Coliforms	23	MPN/100 mL	n	n	n	n	n	n	n

Notes:
a = mass loading of stream includes the Total Stream Flow Rate which was determined to be 562 gpm in February 2005 (LFR 2008)
b = maximum detected level in discharges during evaluation period from July 2009 through June 2010
n = mass loading not calculated because analyte is not measured in mass units

0102/1/6

Table 3
Discharge Concentrations and Relevant Comparison Values
Based on Treated Discharge Analytical Results from July 2009 through June 2010
Mission Valley Terminal
CM010143.0082

Analyte in Effluent	Result[f]	Units	NPDES Permit Max	Upstream Murphy Canyon Creek (LFR 2003)[a]	Upstream San Diego River (LFR 2003)[b]	4-day Average Continuous Concentration Value (Marshack 2008)[c]	Maximum Concentration 1-hour Average (Marshack 2008)[c]	NOAA Screening Quick Reference Table "Chronic" values (NOAA, 2008)
Arsenic	4	ug/l	150			150	340	190
Copper	2.5	ug/l	50[e]			29[e]	50[e]	9[e]
Hardness ($CaCO_3$)	940	mg/l	-	1000[f]	400			
Manganese	63	ug/l	1000					80
Nickel	6.3	ug/l	1520[e]			170[e]	1500[e]	52[e]
Phosphorous	0.1	mg/l	0.2					
Total Nitrogen	1.1	mg/l	2					
Sodium	370	mg/l	60,000	220 (0.02%)	200 (0.02%)			
Selenium	1.5	ug/L	5.0			5	135	5
pH	7.7		g	8	7.7			
Total Suspended Solids	21	mg/l	50					
Settleable Solids	0.1	ml/L/hr	0.2					
Fecal Coliforms	2	MPN/100 mL	200					
Total Coliforms	23	MPN/100 mL	1000					

a = Upstream of Discharge Point
b = Upstream of Discharge of Murphy Canyon Creek (LFR 2003)
c = Inland Surface Waters, Freshwater Aquatic Life Protection (Marshack 2008)
d = Ambient Water Quality Criteria, Freshwater CCC "chronic" values (NOAA, 2008)
e = At greater than 400 hardness
f = maximum detected level in discharges during evaluation period from July 2009 through June 2010
g = pH limit between 6.5 and 8.5

9/1/2010

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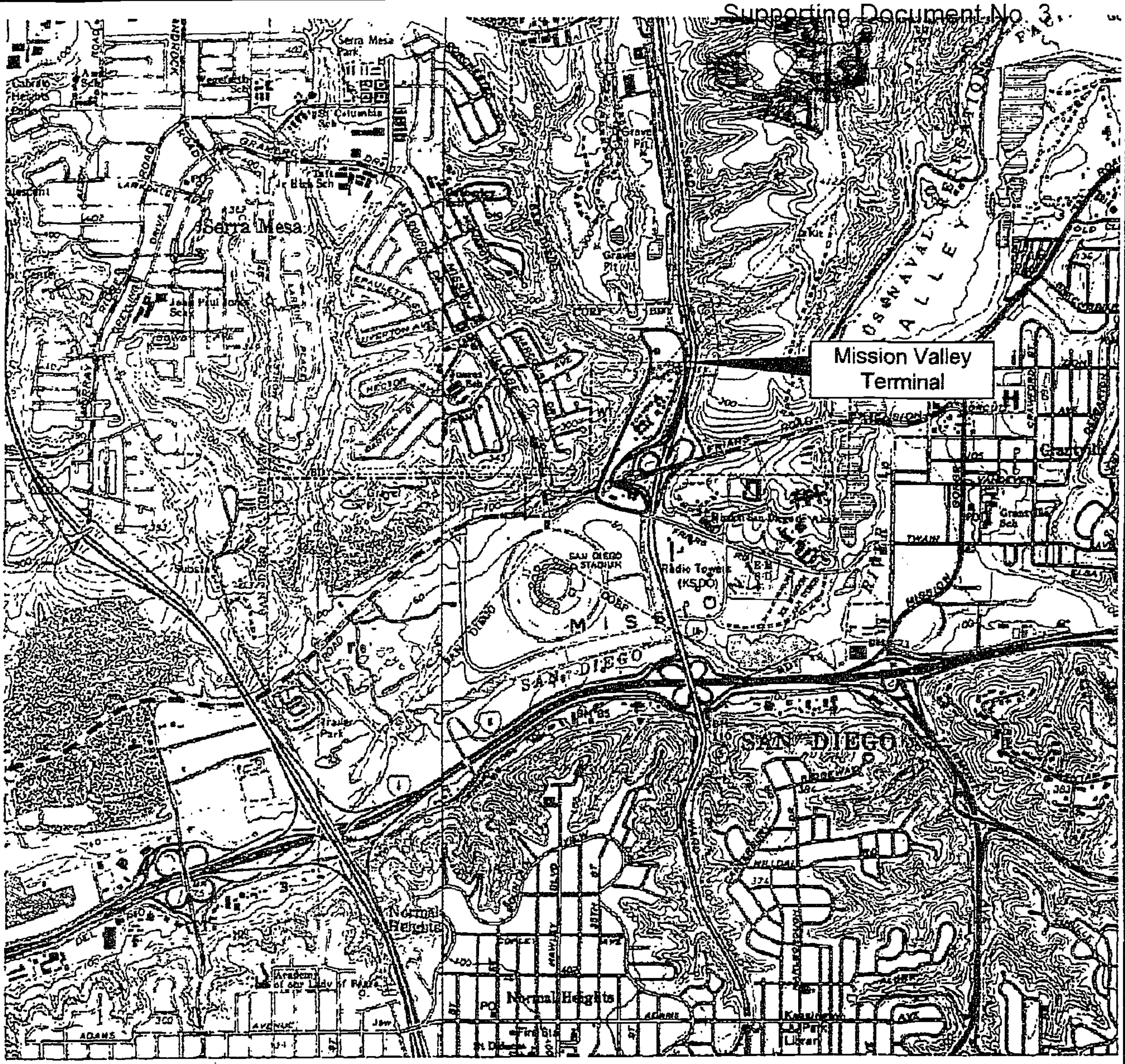
Figure



MAP SOURCE: National Geographic Holdings, TOPO! 2001.

0 1,000 2,000 4,000 feet

MISSION VALLEY TERMINAL
SAN DIEGO, CALIFORNIA
SECOND QUARTER 2010

VICINITY MAP
MAY 2010

ARCADIS

FIGURE
1

EXHIBIT 6

Document in Support of August 12, 2009 RWQCB Meeting Agenda Item 11: Information Item: Mission Valley Terminal Cleanup Status Report

Submitted by LFR, Inc. on behalf of Kinder Morgan Energy Partners
August 5, 2009

EXECUTIVE SUMMARY

Groundwater Remediation

The clean-up goal for off-Terminal groundwater remediation is for concentrations of the chemicals of concern (COCs) to be at or below maximum contaminant levels (MCLs) no later than December 31, 2013. These clean-up goals are documented in the off-Terminal corrective action plan (CAP) (LFR 2005a). Groundwater remediation is being achieved through groundwater extraction and treatment. The treated groundwater is discharged under permit to Murphy Canyon Creek, which is a tributary to the San Diego River.

Groundwater remediation activities have reduced the off-Terminal MTBE mass in groundwater by over 99 percent since 2002. The mass of TBA, a biodegradation product of MTBE, has been reduced by approximately 72 percent since its peak in 2005.

The groundwater extraction system continues to operate efficiently and to meet remedial objectives. Overall, MTBE and TBA concentrations continue to decrease with time. Multiple lines of evidence indicate that groundwater cleanup goals will be achieved by the CAO deadline of December 31, 2013.

Soil Remediation

The clean-up goal for off-Terminal soil affected by residual petroleum hydrocarbon liquids (LNAPL) is for the LNAPL to be removed to the extent technically practicable by December 31, 2010. This goal is documented in the off-Terminal CAP.

Off-Terminal soil remediation is being achieved by soil vapor extraction (SVE) and bioventing with groundwater table suppression. In addition, hydraulic containment is being maintained at multiple locations to provide a barrier to migration of dissolved-phase petroleum hydrocarbons from the on-Terminal residual LNAPL zone into the off-Terminal area, and from the off-Terminal residual LNAPL zone to downgradient locations.

Significant soil cleanup has already occurred in the off-Terminal area. Periodic soil sampling indicates that remediation is successfully reducing the concentration of COCs to levels that will be protective of groundwater quality within the Mission Valley aquifer. Multiple lines of evidence indicate that the soil cleanup criteria will be achieved by the CAO deadline for the LNAPL-affected area characterized at the time the CAO was written. The remediation system for a previously

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undiscovered area of LNAPL-affected soil is currently in the design phase, and is expected to be completed concurrent with the CAO groundwater cleanup deadline of December 31, 2013.

Reinjection of Treated Groundwater

Reinjection of treated groundwater was evaluated and then rejected as part of the off-Terminal Groundwater remediation system design. The City of San Diego has recently suggested that reinjection of oxygen-enriched treated groundwater be further considered as a means of enhancing the rate of in-situ biodegradation and reducing the "wasting" of groundwater.

No "wasting" of water. Rather than "wasting" groundwater as alleged, the current groundwater extraction system is temporarily intercepting a portion of the groundwater that would otherwise naturally discharge to the San Diego River. This groundwater is extracted, treated, and discharged to Murphy Canyon Creek, where it returns to its natural point of discharge, which is the San Diego River. There is no long-term reduction in the annual available groundwater supply due to remedial extraction. Groundwater conditions will recover to the pre-pumping natural conditions within approximately six months to one year after remedial pumping ceases.

No improvement of beneficial use. Treated groundwater remains high in total dissolved solids as there is no appreciable reduction of these naturally occurring minerals during remedial treatment. Injection of this water into the aquifer would not improve the naturally high mineral content of the groundwater basin, which is unsuitable for potable purposes without demineralization.

The risks outweigh the potential benefits. The potential risks of reinjecting treated groundwater outweigh the potential benefits. There is a high potential risk of chemical encrustation of the aquifer as a result of the naturally high mineral content of the groundwater, the treatment-induced geochemical changes, and the potential effects of geochemical interactions leading to mineral and biological fouling after injection. Precipitate formation, scale buildup, and biofouling are all experienced within the Site's extraction, treatment, and discharge system.

No loss of beneficial use to Mission Valley Aquifer. The groundwater that is extracted and treated for the purposes of remediation is available for use by the City of San Diego. Rather than discharging treated groundwater to the San Diego River, this water has been offered to the City for its beneficial use. Use of this groundwater for potable purposes would require demineralization to reduce the naturally high mineral content.

A reliable means of discharging treated groundwater is essential to the ongoing reliability of both the on-Terminal and off-Terminal hydraulic containment barriers. Significant disruptions in the ability to discharge treated water, as would likely occur with reinjection, could compromise our ability to maintain the effectiveness of these barriers.

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Enhanced Aerobic Biodegradation Has No Clear benefit

The City has suggested that reinjection of oxygen-enriched treated groundwater is needed to ensure timely cleanup of the aquifer. The existing groundwater remedy shows steady, acceptable cleanup progress and the groundwater is on track to meet the cleanup deadline. The existing network of extraction wells is inducing additional subsurface biodegradation, as outlying groundwater containing naturally-occurring oxygen, nitrate, and sulfate is mixed into the existing plume. Moreover, the City's assumption that injection of oxygen-enriched water would have significant benefits on the rate of biodegradation is not supported by the results of site-specific studies of biodegradation, which indicate no significant difference between the aerobic and anaerobic biodegradation rates for TBA (LFR, 2007a), the primary remaining chemical of concern in the distal plume area.

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1.0 NATURE OF PROBLEM, CONTAMINANTS AND EXTENT. STRATEGY: PROPERTY BOUNDARY CONTAINMENT, OFF-TERMINAL CLEANUP.

1.1 Site Description

The Site is divided into two areas for discussion purposes: the on-Terminal area, and the off-Terminal area. The on-Terminal area is a 10.5-acre aboveground storage tank facility located in Murphy Canyon, which is oriented north/south and opens into the larger Mission Valley at its southern end. Murphy Canyon and Mission Valley are at the bottom of steep slopes from the surrounding mesa as shown on Figures 1 and 2.

Groundwater flows from the on-Terminal area downgradient toward the off-Terminal area, which is south of San Diego Mission Road and includes Qualcomm Stadium, the stadium parking lot, and areas near the San Diego River south and west of the stadium.

The Terminal has been in operation since 1962 and is owned by SFPP, L.P., an operating partnership of Kinder Morgan Energy Partners, L.P. Portions of the Site have historically been leased to Texaco, Shell, ExxonMobil, and CENCO-Powerine. Petroleum products are delivered to the Terminal through a pipeline that receives product from the Los Angeles Basin. Petroleum products currently or historically stored at the Terminal include leaded and unleaded gasoline, gasoline additives, jet fuel, diesel, ethanol, and transmix (i.e., a mixture of the various refined petroleum products). At various locations over time, petroleum hydrocarbons have historically been released within the Terminal area and have migrated as light non-aqueous phase liquid (LNAPL, commonly termed "free product") in the subsurface to downgradient off-Terminal areas directly south of San Diego Mission Road to the northeast stadium parking lot. Dissolved petroleum chemicals have migrated further south and west to downgradient areas in the vicinity of the stadium and the San Diego River.

Residual LNAPL is present from the manifold area within the Terminal and extends in a relatively narrow band south into the northern parking area of the stadium, and from the current Shell area into the northern parking area of the stadium.

The area of residual LNAPL in soil located south and southwest of the Terminal's southern boundary is referred to as the off-Terminal LNAPL zone. This area is depicted on attached figures as the area bounded by the red line indicating "Current Estimated Extent of Residual LNAPL". The term "residual" is used to indicate that the LNAPL is held within the soil pores and is no longer mobile.

The characterization and remediation of groundwater contamination at the Terminal has been ongoing since the late 1980s. The most recent site conceptual model (SCM) was published in the on- and off-Terminal site conceptual model and corrective action plan reports in 2005. A site conceptual model is a summary of the current state of knowledge regarding the sources of contamination, the pathways of migration of the contamination, and the receptors (i.e., humans or other biota) that may be potentially exposed to the contamination. Data collected through mid-2008 augmented but did not substantially revise the SCM.

In the third quarter of 2008, data that were inconsistent with the then-current SCM were identified in an area west along San Diego Mission Road toward its intersection with Mission Village Drive. Investigation conducted in this area through the second quarter of 2009 has characterized an unexpected and previously-unidentified area of LNAPL-affected soil. Based on an evaluation of available data from groundwater monitoring wells in the area, Kinder Morgan and LFR do not believe that the newly discovered LNAPL-affected soil is contributing to groundwater contamination. In the event that the LNAPL-affected soil in this area were a contributing source to groundwater, the area is hydraulically contained and captured by the existing groundwater extraction system, which prevents any potential migration of groundwater away from the source area. Additionally, LFR is in the process of installing two new groundwater monitoring wells to further verify the groundwater quality underlying the recently discovered LNAPL-affected soil.

1.2 Groundwater Remediation

Clean-up goals for off-Terminal groundwater remediation, as presented in the off-Terminal CAP, are that the chemicals of concern[1] (COCs) are to be at or below their primary and/or secondary maximum contaminant level (MCL) no later than December 31, 2013.

Remediation of on-Terminal and off-Terminal petroleum constituents in groundwater is being achieved through the following measures, as detailed in the site conceptual models and corrective action plans for the on-Terminal and off-Terminal areas (LFR 2005a, 2005b) and the Evaluation of Remedial Progress in the Off-Terminal LNAPL Zone (LFR 2007b):

- hydraulic containment of on-Terminal dissolved-phase petroleum constituents
- hydraulic containment of off-Terminal dissolved-phase petroleum constituents
- hydraulic extraction of the distal dissolved-phase groundwater plume combined with monitored natural attenuation

Hydraulic containment of on-Terminal and off-Terminal dissolved-phase petroleum constituents is being achieved through operation of the on-Terminal hydraulic barrier groundwater extraction (GWE) wells (i.e., RW-35 through RW-37) and the off-Terminal hydraulic barrier wells (i.e., RW-3A, RW-5A, RW-7A, RW-48, and RW-56), respectively. The groundwater extraction well network has undergone multiple expansions over time.

GWE wells RW-35 through RW-37 serve as the property line hydraulic containment barrier to prevent dissolved contaminants or LNAPL from migrating beyond the limits of the Terminal

[1] benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertiary-butyl ether (MTBE), tertiary butyl alcohol (TBA), and ethylene dibromide (EDB)

property. Multiple lines of evidence indicate that the property boundary wells are effectively preventing off-Terminal migration of dissolved contaminants and LNAPL[2]. Wells RW-35 and RW-36 are also part of the dewatering system for the lower portion of the LNAPL-affected zone in the off-Terminal area, which contributes to the groundwater table suppression goals to enhance Soil Vapor Extraction (SVE).

GWE wells RW-3A, RW-5A, RW-7A, RW-48, and RW-56 also serve as dewatering wells to expose the full vertical extent of off-Terminal residual LNAPL-affected soils to remediation by SVE. Details of remedial efforts targeted at the LNAPL zone are included in the Quarterly Remedial Progress Monitoring Report, Second Quarter of 2009. A new groundwater well (RW-107) has been constructed in the off-Terminal area for more efficient dewatering in the western portion of the residual LNAPL zone. The infrastructure design to facilitate integration with the existing groundwater extraction and treatment system (GWETS) is ongoing.

GWE wells RW-8, RW-9, RW-49, RW-50, RW-51, RW-99, RW-100, and RW-101 exert hydraulic control and extract contaminant mass from the distal portion of the groundwater plume. The latter six of these wells commenced pumping during the second quarter of 2009 to accelerate the reduction of the methyl tertiary-butyl ether (MTBE) and tertiary butyl alcohol (TBA) dissolved in groundwater.

1.3 Soil Remediation

The clean-up goal for the off-Terminal LNAPL zone, as presented in the off-Terminal CAP, is that LNAPL be removed to the extent technically practicable by December 31, 2010.

Off-Terminal soil remediation is being achieved through the following measures:

- soil vapor extraction (SVE) and bioventing with groundwater table suppression in the off-Terminal LNAPL zone
- hydraulic containment as a barrier to migration of dissolved-phase petroleum hydrocarbons from either the on-Terminal residual LNAPL zone into the off-Terminal area or from the off-Terminal residual LNAPL zone to downgradient locations.

The off-Terminal SVE system consists of 172 discrete vapor extraction wells at 92 locations (77 dual-nested SVE wells, 24 single-nested wells, and 4 combination SVE/groundwater extraction [GWE] wells) (Figure 2). The on-Terminal SVE system consists of four SVE wells (one single-nested SVE well and three combination SVE/GWE wells). The vapors that are extracted by the SVE wells are connected to a treatment system with a maximum capacity of 3,000 standard cubic feet per minute (scfm), and treated by a regenerative thermal oxidizer. The soil vapor extraction and

[2] These multiple lines of evidence include groundwater contours and flow patterns inferred from groundwater elevation observations and observations of reduced concentrations of COCs in groundwater in the off-Terminal area near the hydraulic barrier.

treatment system (SVETS) is operated in accordance with the County of San Diego Air Pollution Control District (APCD) Startup Authorization No. 986337.

Groundwater table suppression is achieved through groundwater extraction in the vicinity of the off-Terminal LNAPL zone. There are 16 GWE wells located in the on-Terminal and off-Terminal areas. Eight of these wells directly contribute to dewatering the off-Terminal LNAPL zone. Extracted groundwater is treated and discharged to nearby surface waters at a maximum permitted discharge flow rate of 350 gallons per minute (gpm) in accordance with National Pollutant Discharge Elimination System (NPDES) discharge permit R9-2008-0002.

A network of soil vapor monitoring (SVM) probes are installed throughout the off-Terminal LNAPL zone to collect data for evaluation of remedial performance and progress. The SVM probe network currently consists of 144 discrete SVM probes in 51 probe clusters in the off-Terminal area. Each probe cluster consists of three to five depth-discrete probes spaced vertically across the vertical extent of the LNAPL zone and the overlying vadose zone.

2.0 REMEDIATION STATUS

2.1 Groundwater Cleanup Progress

Significant groundwater cleanup has already occurred in the off-Terminal area. As a result of remediation, the mass of MTBE present in the off-Terminal portion of the groundwater plume in May 2009 has decreased by over 99 percent since May 2002 (Figures 3 and 4). The mass of TBA in the off-Terminal plume in May 2009 has decreased by approximately 72 percent since November 2005[3] (Figures 5 and 6). MTBE and TBA mass reduction is partially a result of extraction of affected groundwater with the remaining, and significant, portion of the mass reduction attributable to in-situ biodegradation (natural attenuation).

The groundwater extraction system has continued to operate efficiently and meet remedial objectives. Six new groundwater extraction wells (RW-49 through RW-51 and RW-99 through RW-101), positioned along the core of the distal part of the dissolved-phase plume, were brought online at the start of this quarter, and were sampled for laboratory analysis during the quarter. MTBE and TBA are the only chemicals of concern detected at these new groundwater extraction wells.

MTBE and TBA concentration trends, MTBE and TBA biodegradation, and geochemical parameters of natural attenuation continue to indicate that overall MTBE and TBA concentrations are decreasing with time. Geochemically, the MTBE and TBA plume coincides with groundwater that has become less aerobic/more anaerobic by historical contact with LNAPL-affected soils. These lines of

[3] MTBE and TBA mass reductions are each calculated from the year of peak apparent dissolved mass. The estimated reduction in TBA mass is more uncertain than the MTBE mass reduction due to a less extensive monitoring period, higher detection limit, and recent TBA concentrations observed in newly installed distal extraction wells.

evidence, along with previous microcosm and isotope studies, continue to indicate that natural attenuation, including biodegradation, is reducing concentrations in the MTBE and TBA plumes. Groundwater extraction is also effectively reducing concentrations of MTBE and TBA over time. Current and historical concentration trends in combination with groundwater modeling indicate that the groundwater cleanup goals will be achieved by the CAO deadline of December 31, 2013.

2.2 Soil Cleanup Progress

Multiple lines of evidence indicate that sufficient progress is occurring in the off-Terminal LNAPL zone towards achieving the cleanup criteria. Performance metrics include the tracking of changes occurring in the: (1) concentrations of total volatile organic chemicals (VOCs); (2) concentrations of the most volatile hydrocarbon fraction (lighter than C_8 hydrocarbons [$<C_8$ HC]); (3) SVE mass extraction rates; (4) biodegradation rates; (5) overall hydrocarbon composition trends; and (6) declining concentration trends in the leachability of COCs from soil. Contour maps comparing current and past status of total VOCs and $<C_8$ HC are shown in Figures 7 through 10. Additional details on these performance metrics are presented in the quarterly remedial progress report (LFR 2009).

Evaluation of compositional trends indicates that on the whole there is sufficient progress toward remedial clean-up goals across the off-Terminal LNAPL-affected area that was characterized when the CAO was written. A map illustrating the current status of compositional trends is shown on Figure 11. A significantly smaller area of previously undiscovered LNAPL-affected soil was recently discovered in late 2008 and subsequently characterized during the first and second quarters of 2009 (Figure 2).

Results of periodic soil sampling conducted in February and April 2009 indicate that there have been significant reductions in the concentration of total petroleum hydrocarbons – gasoline range organics (TPH-GRO) and individual chemicals of concern (COCs) in LNAPL-affected soils and leachate. The leachate results demonstrate that remediation is successfully reducing the concentration of COCs to levels that will be protective of future groundwater quality within the Mission Valley aquifer.

All of the multiple lines of evidence indicate that soil cleanup for the off-Terminal LNAPL-affected area that was characterized when the CAO was written will be achieved, to the extent technically practicable, by December 31, 2010. Remediation system expansion for addressing the more recently characterized LNAPL-affected soil is currently in the design phase and this area is expected to meet the cleanup goals concurrent with the CAO groundwater cleanup deadline of December 31. 2013.

3.0 REINJECTION OF TREATED GROUNDWATER

Reinjection of treated groundwater has been considered as part of the off-Terminal groundwater remediation design. The City of San Diego has recently suggested that reinjection of oxygen-enriched treated groundwater be further considered as a means of enhancing the rate of in-situ biodegradation and reducing the "wasting" of groundwater. The following summarizes our analysis of the potential effectiveness and feasibility of treated water injection at the site.

3.1 The current Remediation System Is Not Wasting Water.

Rather than "wasting" groundwater as alleged, the current groundwater extraction system is temporarily intercepting a portion of the groundwater that would otherwise naturally discharge to the San Diego River. This groundwater is extracted, treated, and discharged to Murphy Canyon Creek, where it returns to its natural point of discharge, which is the San Diego River.

3.1.1 Groundwater Flow Balance

In any groundwater system, groundwater flows from points of recharge to points of discharge. In this portion of the Mission Valley Aquifer, the ultimate point of discharge is the San Diego River. Figure 12 illustrates the size and position of this site in relation to the valley aquifer as a whole. Groundwater currently extracted by the remediation system would otherwise discharge, under natural conditions, to the reach of the San Diego River downgradient the Site. The extracted and treated groundwater is currently discharged to the San Diego River via Murphy Canyon Creek; therefore, there is no long-term reduction in the annual available groundwater supply due to remedial extraction. Groundwater conditions will recover to the pre-pumping natural groundwater conditions within approximately six months to one year after remedial pumping ceases.

3.1.2 No Loss of Beneficial Use to Mission Valley Aquifer

Groundwater that is extracted and treated for the purposes of remediation is potentially available for use by the City of San Diego. Rather than discharging treated groundwater to the San Diego River, it has been offered to the City for its beneficial use. Use of this groundwater would require demineralization to reduce the naturally high mineral content, as previously noted by the City and by the San Diego County Water Authority.

3.1.3 No Improvement of Beneficial Uses

Treated groundwater remains high in total dissolved solids as there is no appreciable reduction of these naturally occurring minerals during remedial treatment. Injection of this water into the aquifer would not improve the naturally high mineral content of the groundwater basin, which is unsuitable for potable purposes without demineralization.

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3.2 The Potential Risks of Reinjecting Treated Groundwater Outweigh the Potential Benefits

3.2.1 Risk of Chemical Encrustation within the Aquifer

Chemical encrustation within the aquifer could potentially plug significant portions of the water bearing zone and reduce the permeability and transport characteristics in affected areas. This could further result in disruption of overall dissolved-phase plume remediation by slowing chemical migration in localized areas. Discussions below on natural mineral content, treatment-induced geochemical changes, and potential effects of geochemical mixing indicate that mineral and biological fouling is a significant potential risk.

3.2.2 Risk of Chemical Encrustation and Biofouling within Injection Well Structure

Expected chemical encrustation and biofouling within the injection well structure would result in continually decreasing well efficiency. While appropriate rehabilitation measures could be performed to counter these effects, the degree of potential fouling is significant and would require near full scale implementation to fully evaluate. As above, discussions below support that this is a significant potential risk.

3.2.3 Potential to Compromise Effectiveness of Existing Hydraulic Containment Barrier

A reliable means of discharging treated groundwater is essential to the ongoing reliability of both the on-Terminal and off-Terminal hydraulic containment barriers. Significant disruptions in the ability to discharge treated water could compromise our ability to maintain the effectiveness of these barriers.

3.2.4 Bases

3.2.4.1 High Mineral Content

The treated water is high in total dissolved solids (TDS) concentrations (typically over 2000 milligrams per liter [mg/L]), similarly high in hardness (typically greater than 900 mg/L, expressed as calcium carbonate equivalents) and high alkalinity (typically over 400 mg/L, expressed as calcium carbonate equivalents). For comparison the secondary MCL for TDS is 500 mg/L, and water with a hardness above 180 mg/L is considered very hard (Water Quality Association 2006). The City of San Diego delivers drinking water with TDS ranging from 460 mg/L to 601 mg/L and hardness ranging from 209 mg/L to 273 mg/L (San Diego 2008).

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3.2.4.2 Treatment–System Induced Changes in Water Chemistry

The various treatment processes (oil/water separation, particulate filtration, manganese and iron removal, carbon absorption, denitrification, and oxygenation) do not result in significant changes in the overall TDS, hardness, or alkalinity of the treated groundwater. Iron, manganese and nitrate are removed by the treatment system along with petroleum constituents. Dissolved oxygen is increased; oxidation-reduction potential and pH are shifted during treatment, which also induces changes in mineral equilibrium.

3.2.4.3 High Potential for Continued Mineral Precipitation after Injection

Preliminary geochemical evaluation indicates that the treated groundwater is supersaturated with dissolved minerals such as calcite, aragonite, dolomite, iron oxy-hydroxides, goethite, hematite, manganite, hausmannite, and pyrolusite. Saturation indices greater than zero suggests that water is supersaturated, and minerals will tend to precipitate when shifts in geochemical parameters such as pH and redox conditions take place. Saturation indices for calcium-containing minerals in treated groundwater (i.e., calcite, aragonite and dolomite) were estimated to vary between approximately 0.2 and 0.5. Saturation indices for the iron-containing minerals in treated groundwater (i.e., iron oxy-hydroxides, goethite, and hematite) were estimated to vary between approximately 1.3 and 16.3. Saturation indices for the manganese-containing minerals in treated groundwater (i.e., manganite, hausmannite, and pyrolusite) were estimated to vary between approximately 3.2 and 7.7. The treated water therefore has a general propensity to form solid precipitates upon mixing and equilibration with ambient groundwater.

Additionally, "redox fringe" effects could also result in the precipitation of dissolved metals (e.g., iron) and occurrence of associated biofouling organisms. The redox fringe occurs at the boundary interface between saturated zones depleted of dissolved oxygen and those containing dissolved oxygen; as would be experienced in the injection scenario suggested by the City. This issue would have the highest likelihood of occurring at some distance from the injection well when injected water, high in dissolved oxygen, comes into contact with the dissolved-phase plume boundary and core, which is depleted of dissolved oxygen and is highest in dissolved iron. This effect could result in "systemic plugging through an entire aquifer" (Smith, 1995) in the very zones that depend on groundwater flow for remediation.

3.2.4.4 Operational Experience with the Treatment System

Precipitate formation, scale buildup, and biofouling observed in the Site's groundwater extraction, treatment, and discharge systems indicates that there is a demonstrated tendency for these to be encountered in treated water reinjection wells.

- The main groundwater conveyance line from the off-Terminal area to the treatment system has required periodic cleaning (hydroflushing) to remove build-up, as shown in Figure 13, that precipitates upon the mixing of untreated groundwater extracted from the various extraction wells.

- Accumulation of mineral precipitates and biofilms is the primary factor in the useful lifetime of the cartridge filters (the initial particulate filter at the treatment system). With the recent (March 2009) addition of southern extraction wells (RW-49, RW-50, RW-51, RW-99, RW-100, RW-101) to the groundwater extraction and treatment system (GWETS), the cartridge filter lifetime has fallen substantially from about one or two weeks to two to three days. This is due to an increase in mineral precipitation, primarily iron, due to the mixing of the geochemically dissimilar waters from the northern and southern portions of the off-Terminal groundwater plume prior to treatment.
- In the absence of high hydrocarbon concentrations in the extracted groundwater, the useful lifetime of the granular activated carbon (GAC) is now limited by mineral precipitation (iron and manganese) which causes a coating and hardening of the GAC. Similar precipitation is shown in Figure 14 on the effluent pipeline from the treatment system.

3.2.4.5 Operational Challenges and Delays Due to Reduction in Injection Well Efficiency

Experience with injection of treated water into aquifers at other sites indicates that scale formation in well screens, well filter materials, and aquifer materials outside of injection wells occurs frequently and is a common challenge in the operation of injection systems. Carbonate scale due to hardness and alkalinity, and iron fouling are common problems encountered at injection wells. Long-term use of injection wells under such geochemical conditions eventually results in permanent formation of scale and solid precipitates in aquifer materials, ultimately causing injection wells to fail to the point that they can no longer be rehabilitated. Furthermore, formation of gas bubbles in well screens, well filter materials, and aquifer materials due to geochemical reactions (e.g., off-gassing) also results in reduction of aquifer permeability and creates significant challenges for long-term use of injection wells. These operational challenges would result in delays to remediation progress and could potentially result in permanent reductions in the permeability and yield of the aquifer.

The chemical characteristics of the treated water make it probable that during re-injection, solid precipitates, colloidal precipitates, and biofilms will form in the pore spaces between soil grains in the formation and plug significant portions the aquifer, thereby reducing the overall transmissivity and storativity of the aquifer. This pore-plugging process could result in zones of reduced permeability that grow over time and alter both the quantity and direction of groundwater flow. These changes could be permanent if the precipitation were to occur at some distance from the injection well, which would render a well rehabilitation maintenance program impracticable. Given that total hardness of the treated water is approximately 900 milligrams per liter (mg/L) and the anticipated hypothetical water injection rate would be 350 gallons per minute (gpm), this hypothetical injection scenario would result in approximately 3,785 pounds per day of precipitate-forming chemicals being injected into the aquifer. This amounts to approximately 100 cubic feet per day (ft^3/day), or 36,500 cubic feet per year, of aquifer that could become permanently damaged and unusable due to pore plugging by solid precipitates associated with injection of treated water, assuming the precipitates have a density of 2.7 g/cc and the plugged porosity of the aquifer would be 0.2.

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These effects have the potential to reduce the ability to remediate affected portions of the aquifer within the prescribed timeframe of remediation due to reductions in permeability. Lower formation permeability would result in greater remediation timeframes and potentially undesirable changes in local groundwater flow patterns.

Furthermore, these changes would reduce the overall value of the aquifer as a usable resource due to permeability reductions associated with pore plugging. Long-term consequences of reinjection could hinder the ability for some portions of the aquifer to be exploited as a water source.

3.3 The Chosen Groundwater Remedy Relies Primarily on Physical Removal by Pump-and-Treat, Rather Than on Biodegradation

The City has stated that reinjection is needed to ensure timely cleanup of the aquifer. The existing groundwater remedy shows steady, acceptable cleanup progress and groundwater is on track to meet the cleanup deadline. In order to ensure timely completion, the extraction system was recently expanded to include six new distal extraction wells for physical removal of contaminants. By changing the groundwater flow directions within the more distal portion of the plume, and disrupting the historically stable geochemistry of the plume core (which is depleted in oxygen, nitrate, and sulfate, and enriched in methane), some degree of incidental enhanced biodegradation is expected to occur, as groundwater with naturally-occurring oxygen, nitrate, and sulfate is drawn in and mixed into the plume core. Sulfate and nitrate, which are present in significant background concentrations in the groundwater, are both known to participate in TBA biodegradation reactions.

The City's request presumes that the injection of oxygen-enriched water would have significant benefits on the rate of TBA biodegradation. This presumption is not supported by the results of site-specific studies of biodegradation. Site-specific microcosm studies conducted in 2006 and 2007 do not reveal a significant difference between the aerobic and anaerobic biodegradation rates for TBA (LFR 2007a), which is the primary remaining chemical of concern in the distal plume area.

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4.0 CERTIFICATION

All engineering information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by an LFR Inc. California Professional Engineer.

August 5, 2009

C. Fredrik Ahlers, P.E. — Date
Project Technical Director
Senior Associate Civil Engineer
California Registered Civil Engineer #C 66471

REGISTERED PROFESSIONAL ENGINEER
C. FREDRIK AHLERS
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Expires 6/30/2010
CIVIL
STATE OF CALIFORNIA

* A professional engineer's and/or professional geologist's certification of conditions comprises a declaration of his or her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations, and ordinances.

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5.0 REFERENCES

LFR Levine·Fricke (LFR). 2005a. Site Conceptual Model and Off-Terminal Corrective Action Plan, Mission Valley Terminal, San Diego, California. September 8.

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Smith, Stuart A. 1995. Monitoring and Remediation Wells, Problem Prevention, Maintenance, and Rehabilitation.

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ATTACHMENTS

Figures

1. Site Vicinity
2. Site Plan with Estimated Extent of Residual LNAPL
3. MTBE Isoconcentration Map – May 2002
4. MTBE Isoconcentration Map – May 2009
5. TBA Isoconcentration Map – November 2005
6. TBA Isoconcentration Map – May 2009
7. Average SVM Probe and SVE Well Laboratory Analytical VOC Concentrations – Fourth Quarter 2006
8. Average SVM Probe and SVE Well Laboratory Analytical VOC Concentrations – Second Quarter 2009
9. Average SVM Probe and SVE Well Laboratory Analytical <C8 Concentrations – Fourth Quarter 2006
10. Average SVM Probe and SVE Well Laboratory Analytical <C8 Concentrations – Second Quarter 2009
11. SVE Well and SVM/TSV Probe Grading – June 2009
12. Extent of Site within Mission Valley Aquifer
13. Site Photographs - Fouling on Extracted Water Conveyance
14. Site Photographs - Mineral Fouling on Treated Discharge Pipe

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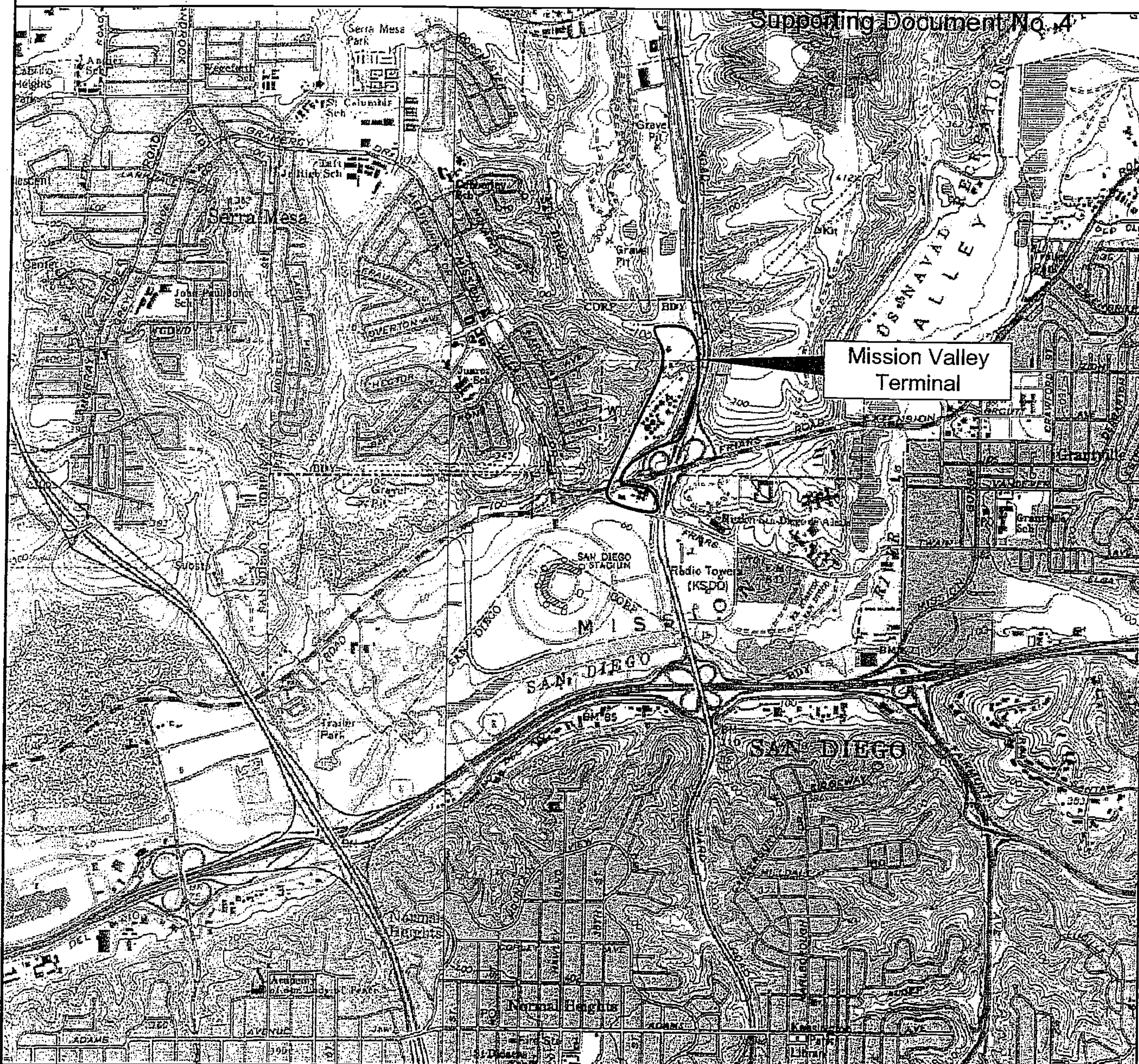

MAP SOURCE: National Geographic Holdings, TOPO! 2001.

0 1,000 2,000 4,000 feet

Vicinity Map

Mission Valley Terminal - 002-10143-32

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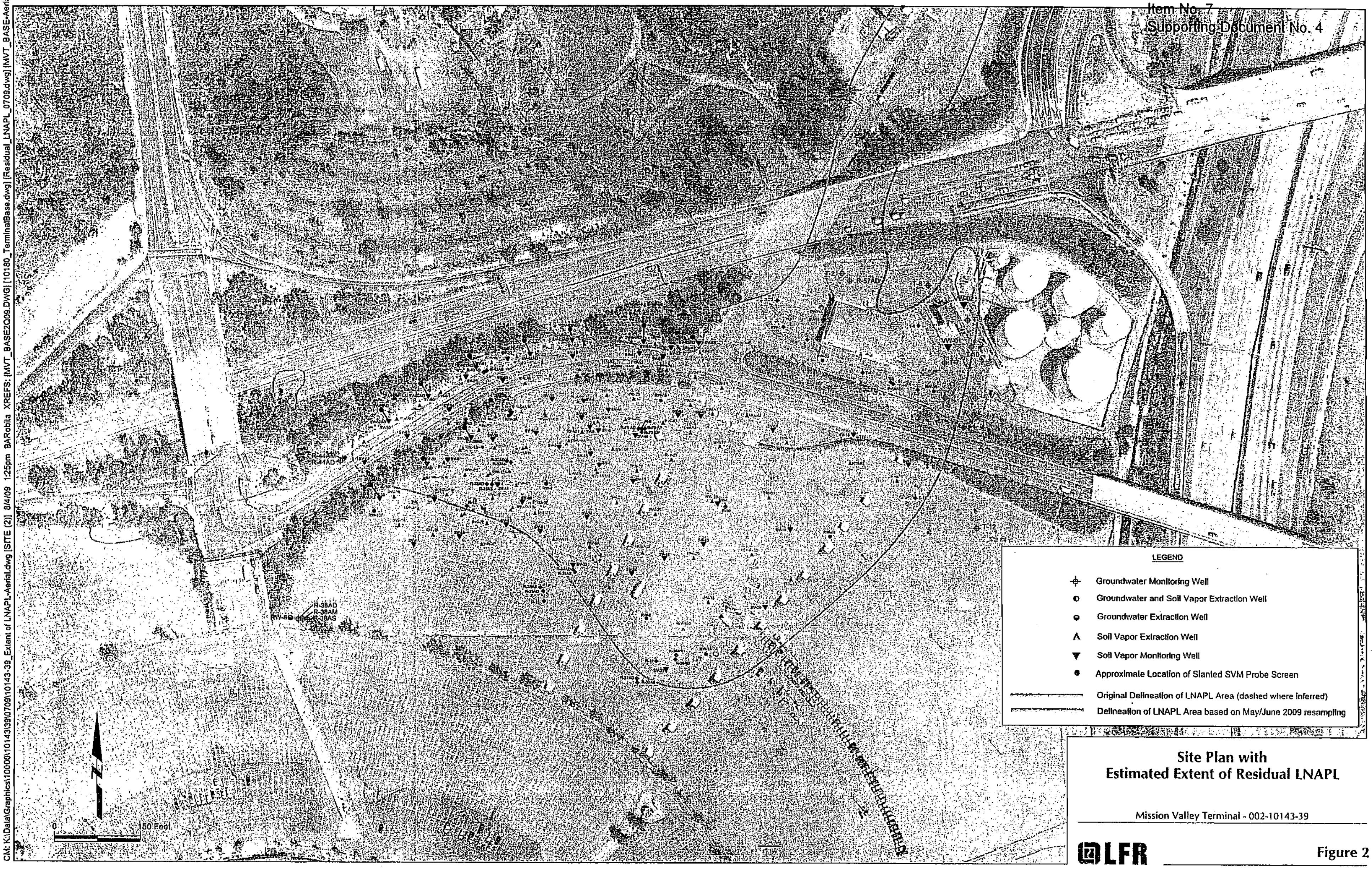
Figure 1

K:\Data\Graphics\10000\10143\2QTR2009\2Q09Fig1 Vicinity Map.dwg [Vicinity] 5/8/09 11:46am BARobita XREFS:



Site Plan with
Estimated Extent of Residual LNAPL

Mission Valley Terminal - 002-10143-39

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Figure 2

CM: K:\Data\Graphics\10000\10143\39\0709\10143-39_Extent of LNAPL-Aerial.dwg [SITE (2)] 8/4/09 1:25pm BARobila XREFS: [MVT_BASE2Q09.DWG] [10180_TerminalBase.dwg] [Residual_LNAPL_0709.dwg] [MVT_BASE-Aerial.DWG

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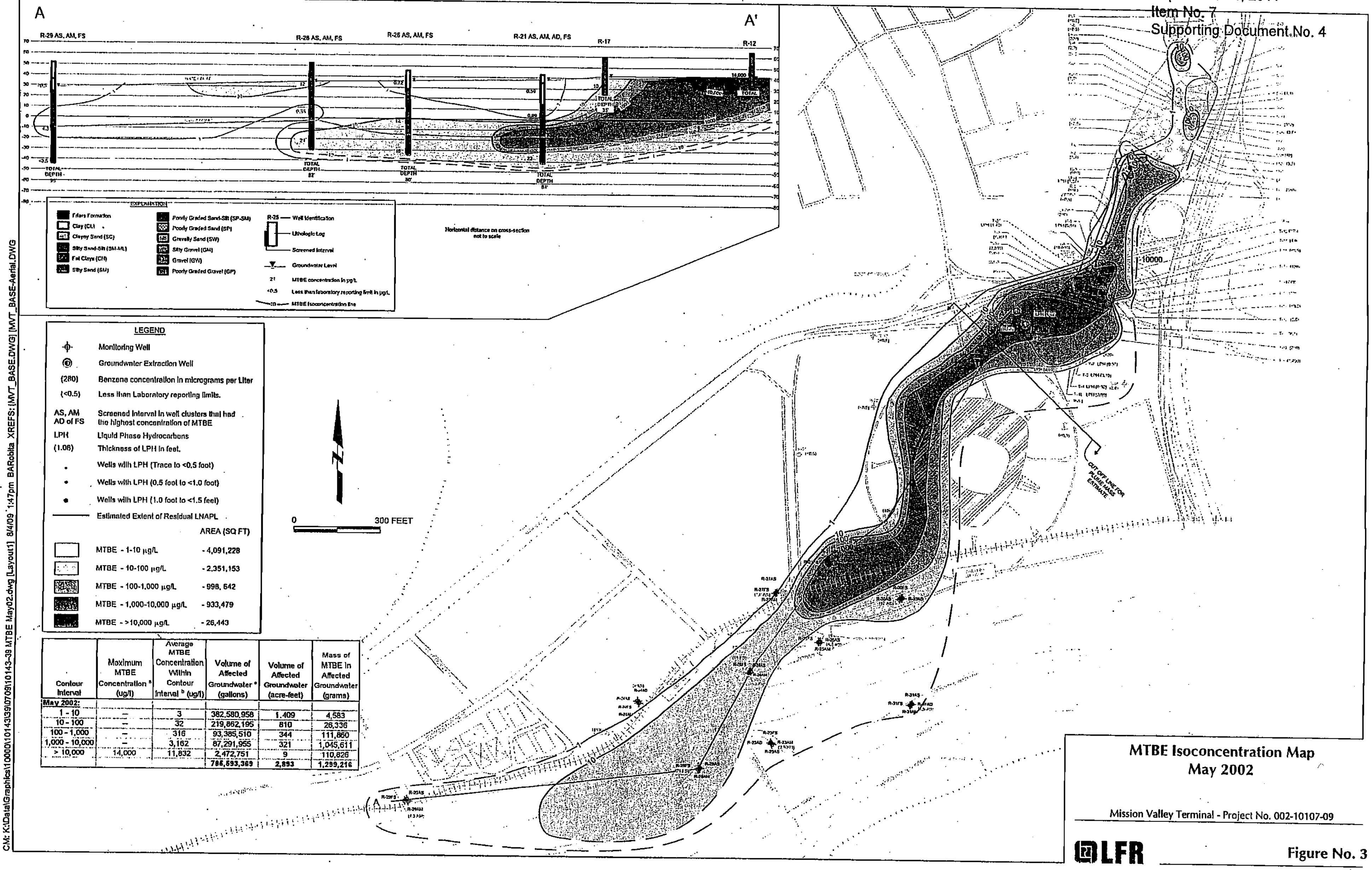

Contour Interval	Maximum MTBE Concentration [a] (ug/l)	Average MTBE Concentration Within Contour Interval [b] (ug/l)	Volume of Affected Groundwater [a] (gallons)	Volume of Affected Groundwater (acre-feet)	Mass of MTBE in Affected Groundwater (grams)
May 2002:					
1 - 10	–	3	382,580,958	1,409	4,583
10 - 100	–	32	219,862,195	810	26,336
100 - 1,000	–	316	93,385,510	344	111,860
1,000 - 10,000	–	3,162	87,291,955	321	1,045,611
> 10,000	14,000	11,832	2,472,751	9	110,826
			785,593,369	2,893	1,299,216

MTBE Isoconcentration Map
May 2002

Mission Valley Terminal - Project No. 002-10107-09

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Figure No. 3

CM: K:\Data\Graphics\10000\10143\39\07\09\10143-39 MTBE May02.dwg [Layout1] 8/4/09 1:47pm BARobita XREFS: [MVT_BASE.DWG] [MVT_BASE-Aerial.DWG

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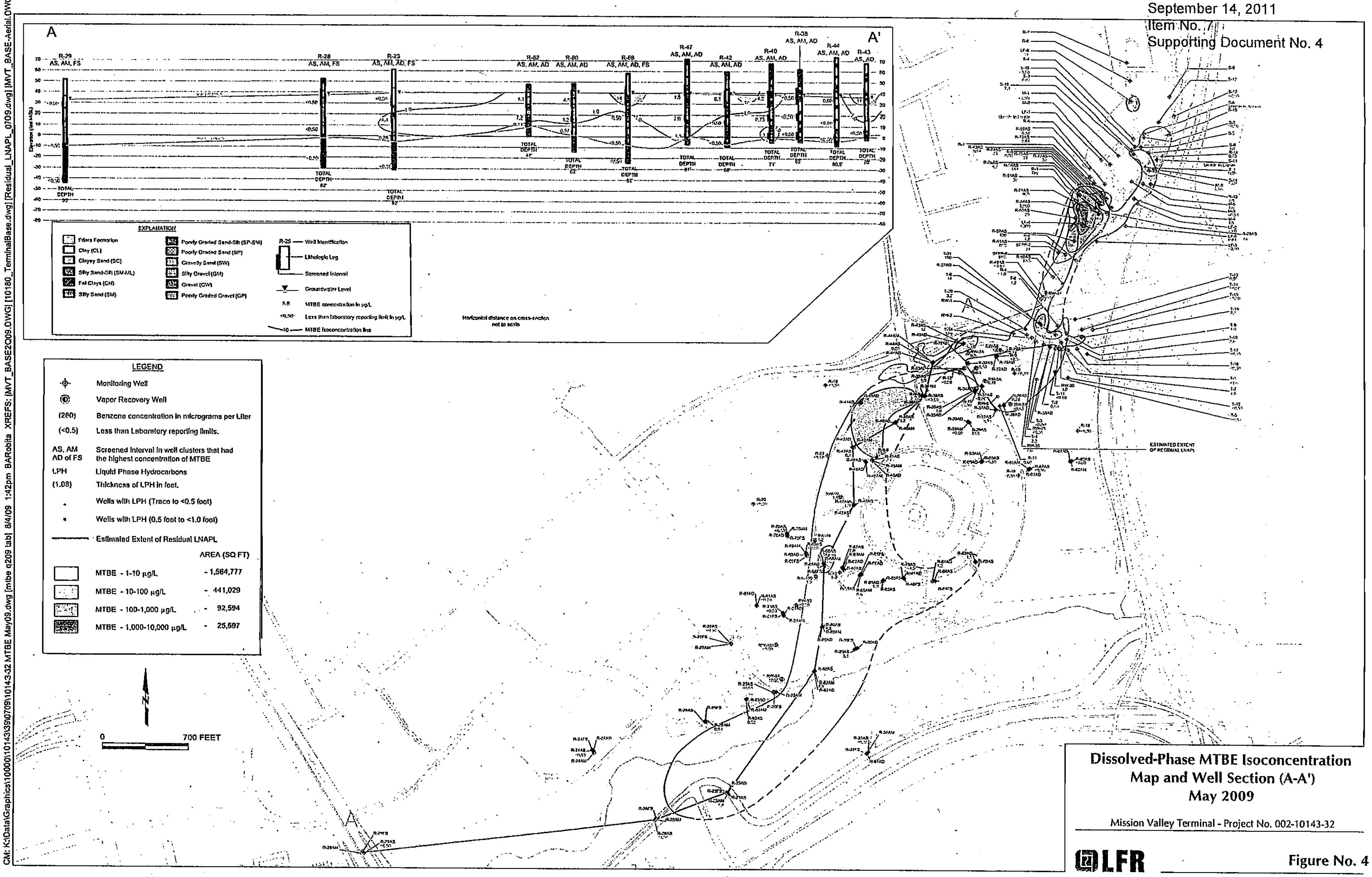

Dissolved-Phase MTBE Isoconcentration Map and Well Section (A-A')
May 2009

Mission Valley Terminal - Project No. 002-10143-32

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Figure No. 4

CM: K:\Data\Graphics\10000\10143\39\0709\10143-32 MTBE May09.dwg [mibe q209 tab] 8/4/09 1:42pm BARobita XREFS: [MVT_BASE2Q09.DWG] [10180_TerminalBase.dwg] [Residual_LNAPL_0709.dwg] [MVT_BASE-Aerial.DWG]

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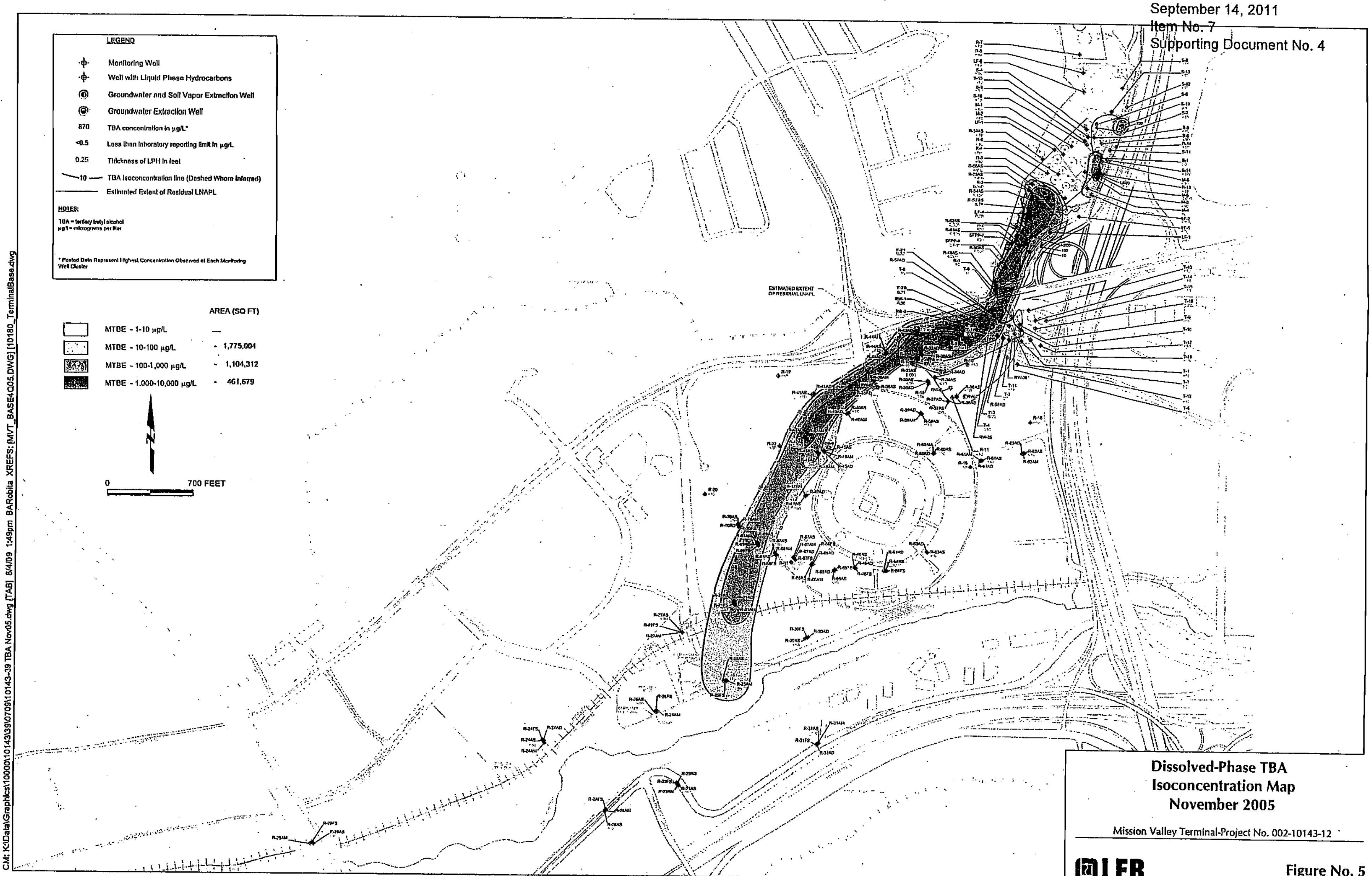

Dissolved-Phase TBA Isoconcentration Map November 2005

Mission Valley Terminal-Project No. 002-10143-12

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Figure No. 5

CM: K:\Data\Graphics\10000\10143\39\07\09\10143-39 TBA Nov05.dwg [TAB] 8/4/09 1:49pm BARoblia XREFS: [MVT_BASE4Q05.DWG] [10180_TerminalBase.dwg

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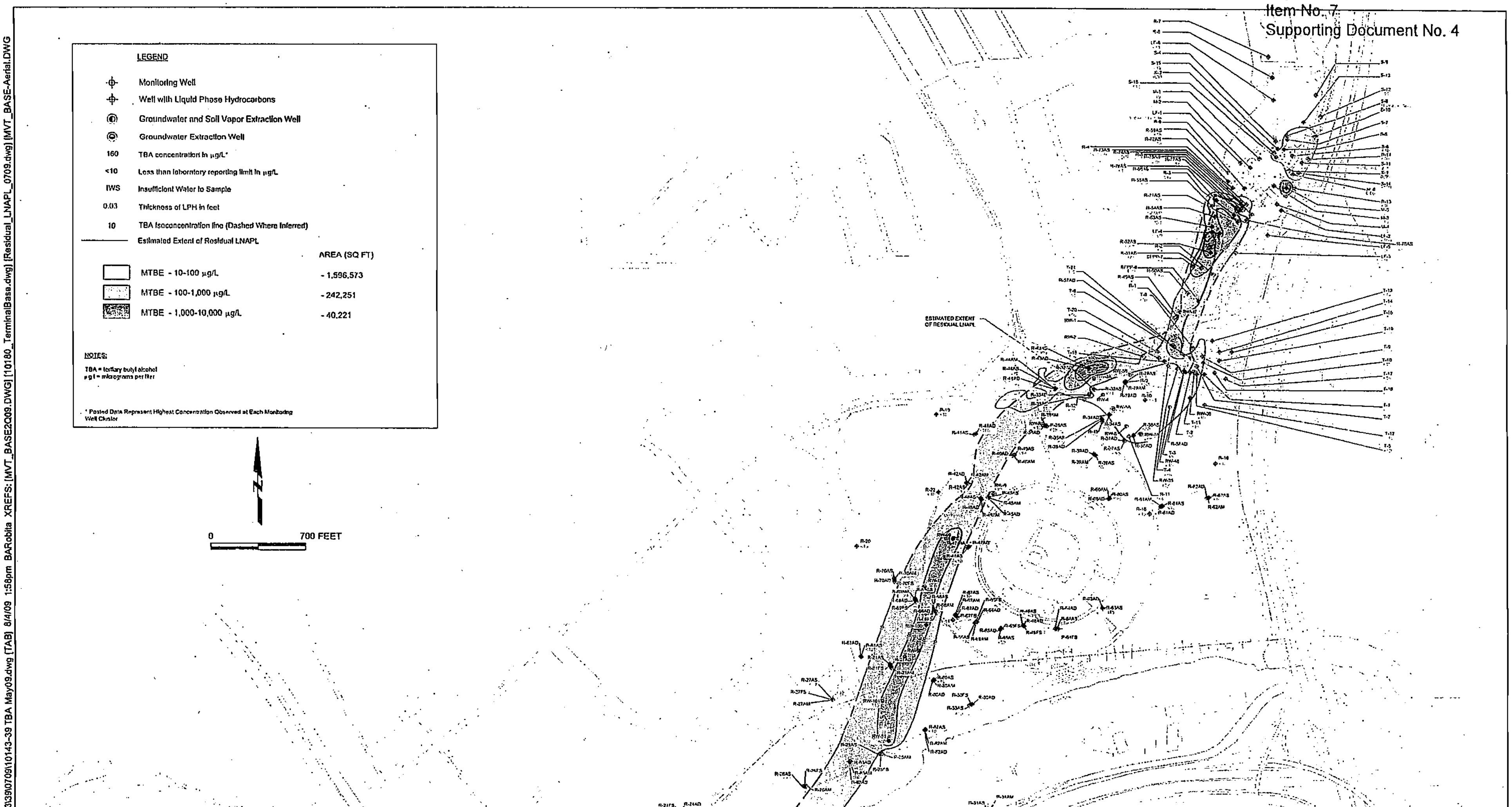

Dissolved-Phase TBA Isoconcentration Map
May 2009

Missiont Valley Terminal-Project No. 002-1-143-32

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Figure No. 6

CM: K:\Data\Graphics\10000\10143\39\07\09\10143-39 TBA May09.dwg [TAB] 8/4/09 1:58pm BARobita XREFS: [MVT_BASE2Q09.DWG] [10180_TerminalBase.dwg] [Residual_LNAPL_0709.dwg] [MVT_BASE-Aerial.DWG

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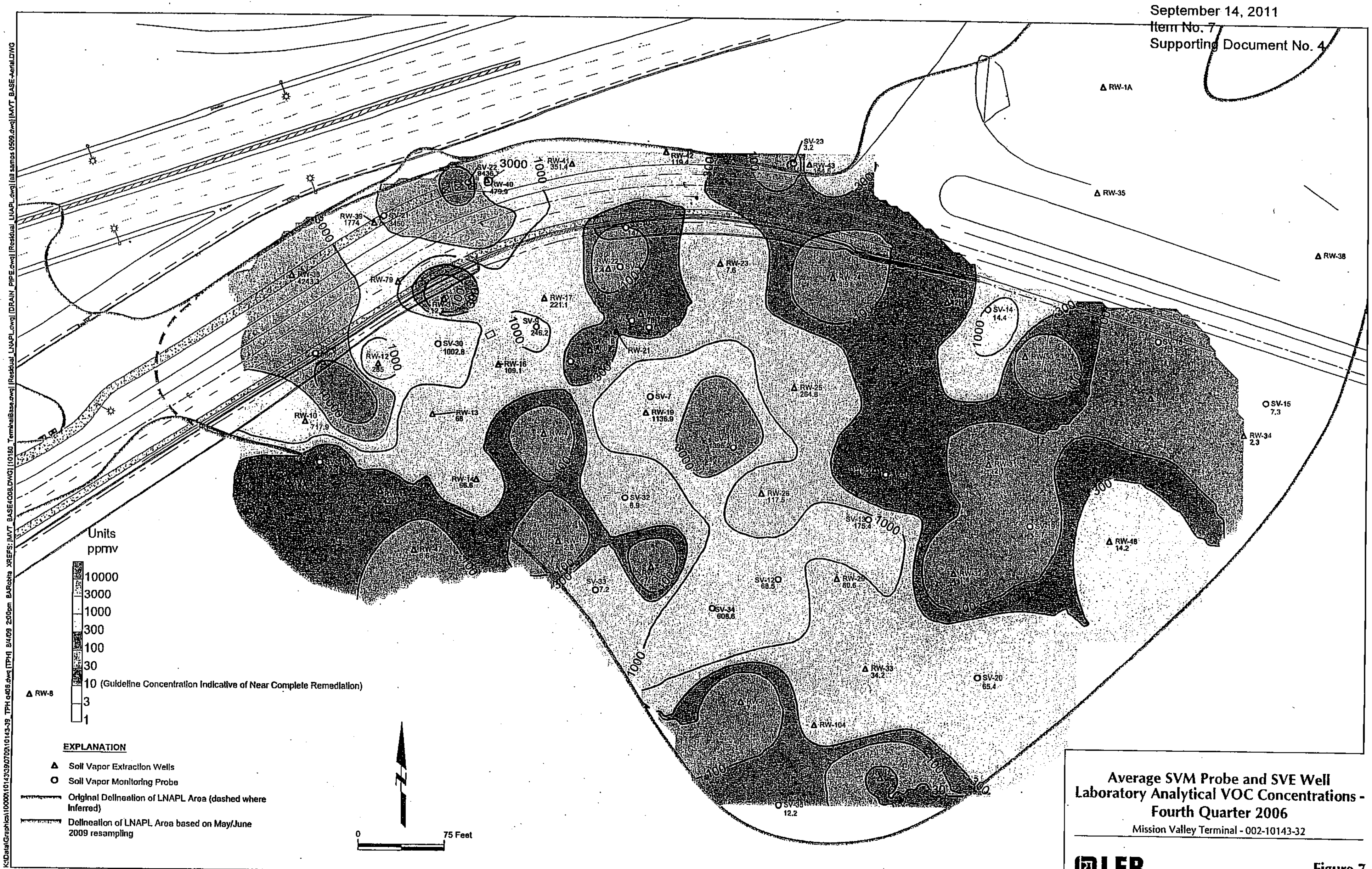

Average SVM Probe and SVE Well Laboratory Analytical VOC Concentrations - Fourth Quarter 2006

Mission Valley Terminal - 002-10143-32

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Figure 7

September 14, 2011
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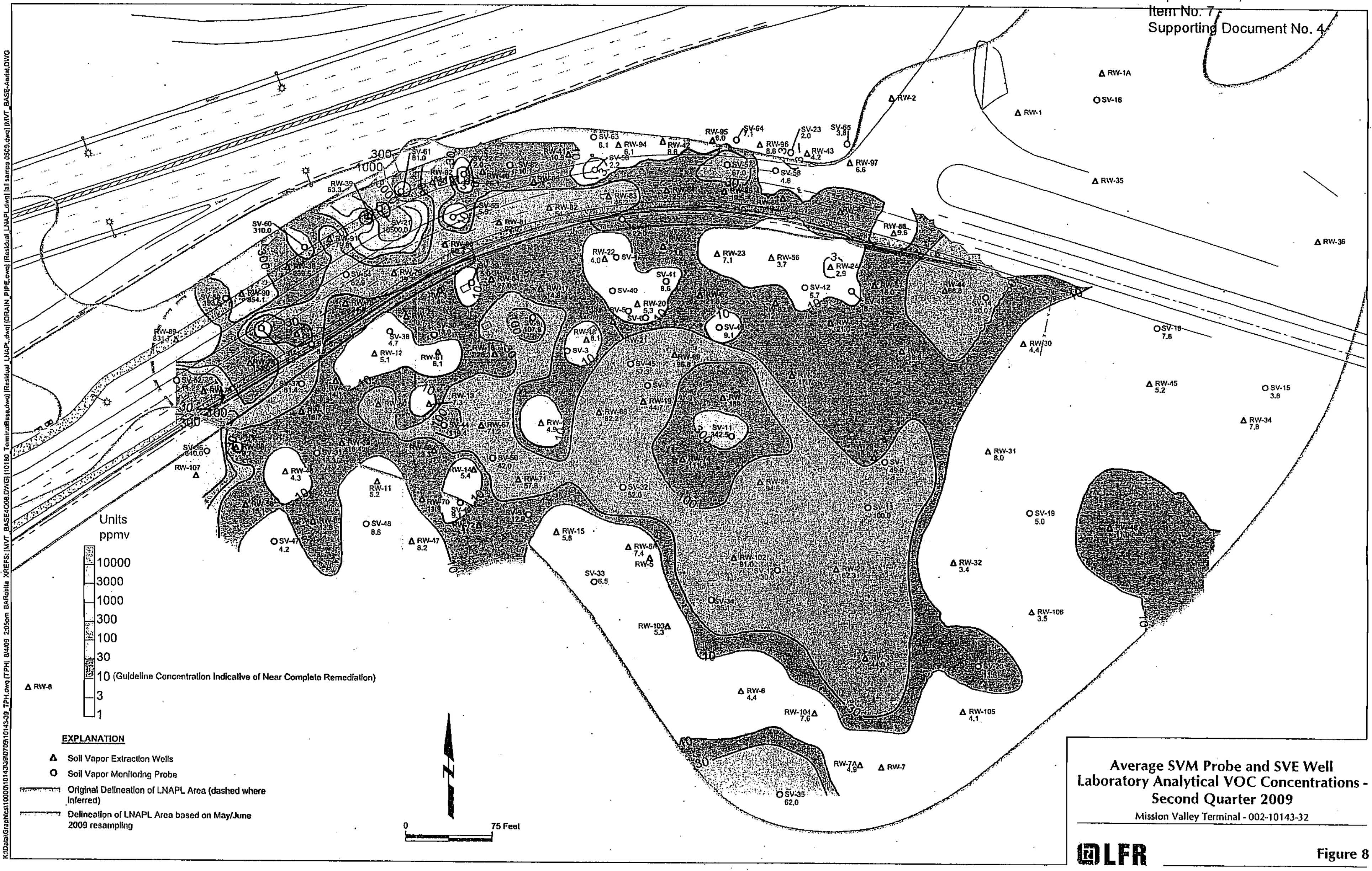
Supporting Document No. 4



Average SVM Probe and SVE Well Laboratory Analytical VOC Concentrations - Second Quarter 2009

Mission Valley Terminal - 002-10143-32

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Figure 8

September 14, 2011
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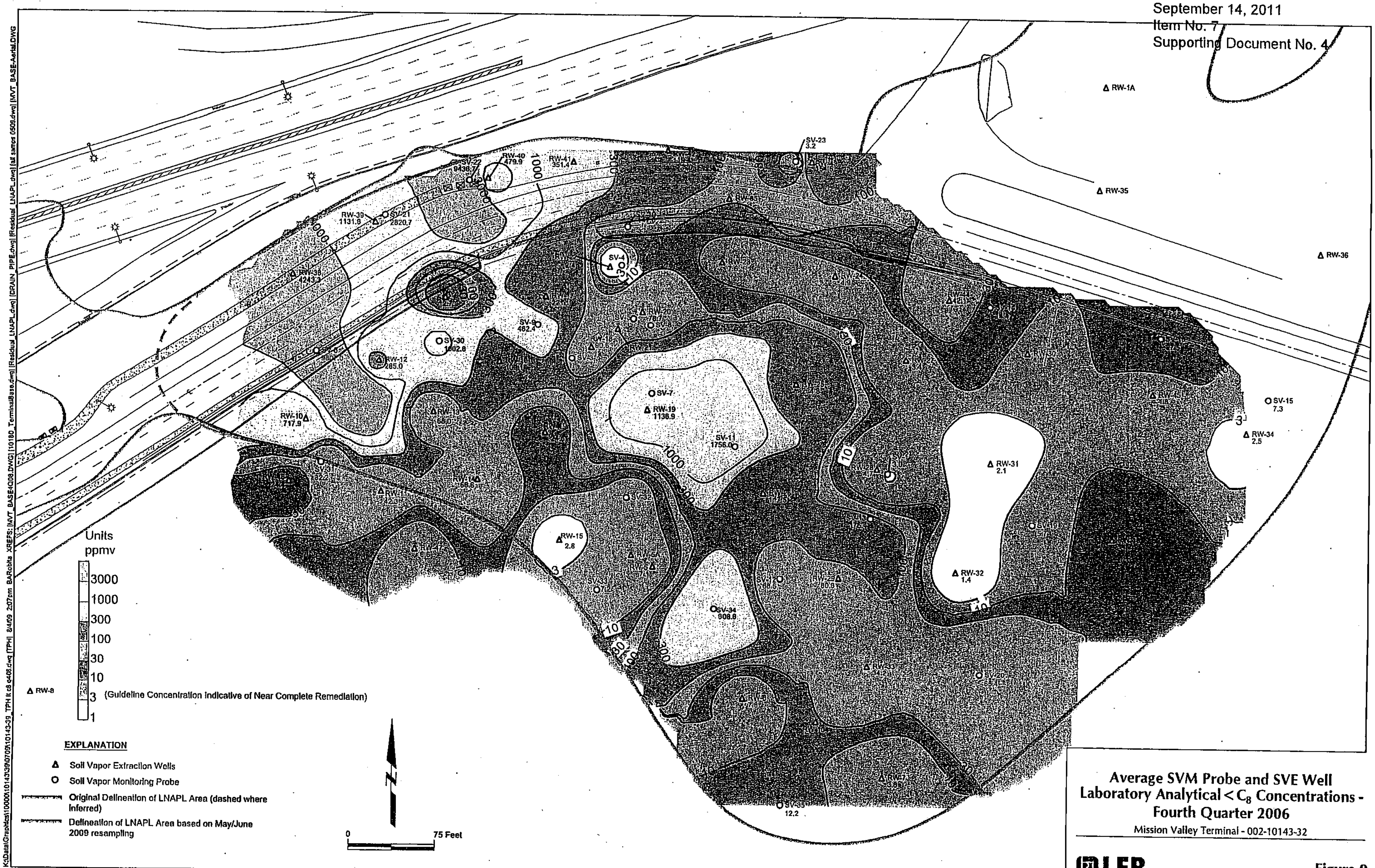
Supporting Document No. 4



Average SVM Probe and SVE Well Laboratory Analytical < C_8 Concentrations - Fourth Quarter 2006

Mission Valley Terminal - 002-10143-32

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Figure 9